Compendium of Clinical and Health Indicators

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The Information Centre

knowledge for care

FOR HEALTH AND SOCIAL CARE **NHS**

Data Definitions and User Guide for Computer Files

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COMPENDIUM OF CLINICAL AND HEALTH INDICATORS

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INTRODUCTION

Overview

This user guide accompanies the ongoing release of the *Compendium of Clinical and Health Indicators*. The *Compendium* can be accessed on the *Clinical and Health Outcomes Knowledge Base* via the internet at http://www.nchod.nhs.uk as a disclosure controlled version, which removes any data that may potentially identify an individual, or via the NHSnet at http://nww.nchod.nhs.uk (available only to NHS staff who are allowed access to such data). Indicator source data are usually supplied at different times throughout the year. Parts of the *Compendium* are thus updated as data become available, in order to ensure that users always have access to the most up to date information for any indicator at the time of access.

The *Compendium* brings together indicators from several data sets developed historically by the Department of Health (DH) over a number of years in response to a variety of needs and policy initiatives, for example, the Public Health Common Data Set, population health outcome indicators, *Our Healthier Nation* (OHN) indicators, clinical indicators, cancer survival indicators and others.

The production of the *Compendium* is now undertaken by The NHS Information Centre for health and social care (NHS IC). The NHS IC is responsible for co-ordination of data extracts from the Department of Health (DH), the Office for National Statistics (ONS) and other external sources, analyses of the majority of the data, and the co-editing of relevant specifications and technical annexes.

The user guide to the *Compendium* (currently available only in electronic form) provides a description of the data grouped by conditions / health topics, specifications of the indicators, annexes with technical details, and a file matrix. The specifications include updated descriptive information for each indicator concerning its purpose, variants, numerator and denominator data, statistical methods, references, and a summary table of the data available.

The spreadsheet data files have a common layout, as far as is possible, with the same organisations in the same rows and use hyperlinks for faster browsing through the data. On the NHS version, they are provided both as multiple worksheets, covering the different types of statistical analyses for a particular category of indicator, and as single worksheets. The public version provides single worksheets only. Historical data presented as tables, maps, and graphs are available in archived *Compendia* dating back to 1998.

Types of data

The *Compendium* indicators cover various aspects of population health and clinical and health outcomes. Data are analysed by age; gender; National Health Service (NHS) and government geographical boundaries (national, regional, local); and health care institutions; for the most recent year(s) and with trend data for selected indicators. A variety of different statistical analyses such as direct and indirect standardisation, years of life lost etc. are available. Each indicator covers different combinations of all these aspects, based on what is possible and feasible with currently available routine data, and these are described in detail within each indicator specification.

Data provided in the *Compendium* are at national (England & Wales, England) and various sub-national levels, such as Government Office Region (GOR), ONS Area Classification, Strategic Health Authority (SHA), Local Authority (LA), Primary Care Organisation (PCO) and County (CTY). They are based either on single calendar, financial, or academic year, or are three years' pooled data. The main groups of indicators for which figures are presented as current and / or trend data include:

- Mortality;
- Years of life lost;
- Cancer incidence;
- Cancer survival;
- Cancer deaths st home;
- Cancer screening programmes;
- Hospital Episode Statistics (HES) based indicators;
- Vaccinations;
- Infectious diseases;
- Congenital malformations;
- Births and infant mortality;
- Oral health in children;
- Fertility;
- Conceptions;
- Abortions;
- Life expectancy;

- 2001 Census based indicators;
- ONS Area Classification;
- Indices of Deprivation 2004;
- General Household Survey (GHS) smoking and drinking indicators;
- Health Survey for England (HSE) based indicators;
- Expenditure and Food Survey (EFS) fat consumption indicators;
- Population indicators including ONS 2001 Census based estimates and GP registered and resident relevant estimates
- Primary care based indicators.

For a complete list of *Compendium* indicators and filenames see the matrix in Annex 11.

Data sources

There are a variety of sources as follows:

- The ONS supplies mortality data, cancer registrations, life expectancy, births and infant mortality data, congenital anomaly data, data related to indices of deprivation, and population estimates;
- The DH either supplies or co-ordinates data extracts of HES data managed by Northgate Information Solutions, accident morbidity data, data on health risk factors (from national health surveys). Data produced / processed by DH include GP registered population estimates, vaccination data, legal abortion data, five year population projections (currently not available), 2001 Census based data;
- The Health Protection Agency supplies infectious disease notification data;
- The British Association for the Study of Community Dentistry is responsible for the oral health data supplied by the DH, West Midlands Public Health Group;
- The National Down Syndrome Cytogenetic Register (Wolfson Institute of Preventive Medicine) at St. Bartholomew's and the Royal London School of Medicine and Dentistry provides data on Down syndrome diagnoses and outcomes;
- The Department for Environment, Food and Rural Affairs provides data on health risk factors related to fat consumption based on the Expenditure and Food Survey;
- The National Centre for Social Research provides data for the Health Survey for England indicators;
- Quality and Outcomes Framework is the source of data for primary care indicators which are supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care.

Quality of indicators

The indicators in the *Compendium* have been brought together from disparate sources and there are ongoing attempts to ensure consistency between them. As an aid to this endeavour, a review of internationally used criteria to judge the quality of indicators was undertaken and is reported in Annex 12. The review shows that the criteria are specific to the context in which an indicator and the data are to be used. Users are advised to refer to these criteria in assessing the suitability of an individual indicator for a specific intended use.

Comments on the *Compendium*

Comments on the scope and contents of the *Compendium* should be sent to:

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Comments and questions on the definitions and calculations plus suggestions for new indicators and requests for further analyses should be sent to:

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Updated: August 2010

Estimates of resident population

Purpose:

To facilitate planning of health services at local level and provide denominators for epidemiological analyses.

Definition of indicator and its variants:

Mid-year estimates of resident population for the respective calendar years, based on the 2001 Census by age and sex. The estimated resident population of an area includes all people who usually live there, whatever their nationality. Members of UK and non-UK armed forces stationed in the UK are included and UK forces stationed outside the UK are excluded. Students are taken to be resident at their term time address.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number	MFP	All ages, <1, 1-4, 5-9, 10-14, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-69, 70-74, 75-79, 80-84, 85+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009 2008 2007 2006 2005 2004 2003 2002 2001 2000 1999 1998 1997 1996 1995 1994 1993		01A_001NO_09_V1 01A_001NO_08_V3 01A_001NO_07_V4 01A_001NO_06_V5 01A_001NO_05_V7 01A_001NO_04_V8 01A_001NO_03_V7 01A_001NO_02_V7 01A_001NO_01_V4 01A_001NO_00_V4 01A_001NO_99_V4 01A_001NO_98_V4 01A_001NO_97_V4 01A_001NO_96_V4 01A_001NO_95_V4 01A_001NO_94_V4 01A_001NO_93_V4

Numerator:

Numerator data - Estimates of resident population in the mid-respective year by age and sex.

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - In the current versions, all population estimates are provided for LA boundaries as of April 2009, for PCO boundaries as of April 2010 and for ONS areas aggregated from new LAs (boundaries as of April 2009).

The population data released by the ONS in May 2010 are revised mid-2002 to mid-2008 estimates for LAs and mid-2008 estimates for PCOs. Revised mid-2002 to mid-2007 estimates for PCOs were released in November 2010. The figures are presented at national level and subnationally by five year age group and sex. These revised estimates reflect the improved methods for measuring migration, developed under the Interdepartmental Task Force on Migration Statistics.

Previously published data for 2001 to 2007 were also revised mid-year estimates derived from the 2001 Census with allowance for subsequent births, deaths, migration, and ageing of the population. ONS identified an undercount in the original 2001 population estimates of certain population groups, mainly young men. An adjustment for this was incorporated in the revised 2001 and the 2002 mid-year estimates released in September 2003. The Census Matching Project for Manchester resulted in further revisions to the 2001 and 2002 estimates for the City of Manchester, with the estimates for Greater Manchester, North West Government Office Region (GOR), England, and England & Wales also being amended as a consequence. These revisions were released in November 2003. A further revision to the 2002 estimates were released in January 2004 as a result of an amendment to the armed forces population estimates. Final versions of the 2001 and 2002 mid-year population estimates, incorporating changes from further Census Matching Projects, were released by ONS in September 2004. The latest versions of mid-year estimates for 2002 to 2005 are reflecting revisions due to improved international migration and were released in August 2007 and October 2007 for Local Authorities and Primary Care Organisations respectively.

In October 2006, re-structured Primary Care Organisation (PCO) boundaries came into effect. As a result, the number of PCOs was reduced from 304 to 152 and the coterminosity between LAs and PCOs was increased to 342 LAs wholly coterminous with 130 PCOs. For these PCOs, estimates were produced back to 1993 by an aggregation of LA mid-year estimates. Using a new simplified methodology, ONS produced back-dated time series

of population estimates for all new PCOs (including 22 PCOs non-coterminous with LAs) for mid-2002 to mid-2005 in March 2007.

Figures for 1993-2000 are ONS revised rebased mid-year estimates based on the 2001 Census. The 2001 Census results showed that previous mid-year population estimates produced during the 1990s were overestimates of the population. This was due to the following: (1) overestimation of the under-enumeration in the 1991 Census, and (2) underestimation of the outward migration over the ten year period following 1991. Therefore, the estimates for 1991 to 2000 have had to be rebased downwards to make them consistent with the 2001 Census.

A minor error has been corrected for the mid-2004 population estimates affecting the London Borough of Harrow and 'higher' geographical levels on 20 December 2005. For more detailed information see the note at: http://www.statistics.gov.uk/downloads/theme_population/Correction_Population_Estimates_Dec2005.pdf

It is ONS policy to publish population estimates rounded to at least the nearest 100 persons. Estimates are sometimes provided in units to facilitate further calculations. They cannot be guaranteed to be as exact as the level of detail implied by unit figures.

ONS publishes detailed national population estimates by sex and single year of age, and local estimates by sex and quinary age group. Local estimates are also now calculated by single year of age, but these figures are less reliable, and single year of age data for local areas have been aggregated to five-year groupings for use in further calculations and for presentation purposes.

For more information about methodological issues concerning population change figures and contributing factors such as migration see: http://www.statistics.gov.uk/downloads/theme_population/2007_FAQ.pdf

Information about the ONS small area population estimates project can be found at: http://www.statistics.gov.uk/sape

Denominator:

Denominator data - Not applicable.

Source of denominator data - Not applicable.

Comments on denominator data - Not applicable.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Mid-year population estimates short methods guide. *Office for National Statistics*. Available at: http://www.statistics.gov.uk/STATBASE/Product.asp?vlnk=575
2. Population Estimates by Ethnic Group: Methodology Paper. *Office for National Statistics*. Available at: http://www.statistics.gov.uk/downloads/theme_population/MethodologyforPEEG.pdf
3. Making a population estimate in England and Wales. *National Statistics Methodological Series No. 34.* Available at: http://www.statistics.gov.uk/downloads/theme_population/Making_PopulationEstimate.pdf
4. Population Estimates. A Short Guide to Population Estimates. *Office for National Statistics*. Available at: http://www.statistics.gov.uk/downloads/theme_population/Short_Guide_revision_Nov_04_final.pdf
5. Benton P, White I. Looking beyond the 2001 Census. *Office for National Statistics Population Trends*, Vol. 113, 2003: 7-10.
6. Chappell R, Duncan C, Smith J Whitworth A. Implications of 2001 Census for local authority district mid-year population estimates. *Office for National Statistics Population Trends,* Vol. 113, 2003: 20-31.

Updated: December 2010

GP relevant population estimates

Purpose:

To facilitate planning of health services at local level.

Definition of indicator and its variants:

GP relevant population registered with a GP constituent practice and resident relevant population with a usual address within the respective geographical boundary by age and sex.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number	MFP	All ages, 18 & over, <1, 1-4, 5-9, 10-14, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-69, 70-74, 75-79, 80-84, 85+	E&W, E, GOR, ONS area, SHA, PCO	2009		01C_185NO_09_V1

Numerator:

Numerator data - Estimated number of GP and resident relevant male and female population based on GP lists in the 2010 Attribution Data Set (ADS) and constrained to Office for National Statistics (ONS) 2009 mid-year estimates (excluding special populations).

Source of numerator data - The NHS Information Centre for health and social care (IC).

Comments on numerator data - GP patient registration data were extracted from Family Health Services (FHS) registers at postcode level in April 2010 or re-assigned to the postcode geography of the respective GP list. Special populations *i.e.* armed forces, dependents of foreign armed forces, and convicted prisoners who have been inmates for 6 months or more are not included.

Denominator:

Denominator data - Not applicable.

Source of denominator data - Not applicable.

Comments on denominator data - Not applicable.

Statistical methods:

All data have been adjusted to be consistent with population estimates published by ONS and then special populations removed - the figures bear no resemblance to actual people. Therefore no figures have been suppressed, and the spreadsheet may contain figures of 1. This does not imply that there is one person in that Primary Care Organisation (PCO) in that age band, nor should it be taken to suggest that the figures are accurate to this level. Their accuracy will be limited by the combined accuracy of: the ONS mid-year estimates, FHS registers and GP practice registers, and the postcode to NHS organisation translations in the NHS Postcode Directory.

For more information on methodology, see Annex 10.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Updated: June 2011

Indices of Deprivation 2010

Purpose:

To provide a measure of deprivation at local level. The Indices of Deprivation are used widely to analyse patterns of deprivation, identify areas that would benefit from special initiatives or programmes and as a tool to determine eligibility for specific funding streams.

Definition of indicator and its variants:

The English Indices of Deprivation are the Government's official relative measure of multiple deprivation in small areas across England called Lower layer Super Output Areas (LSOAs).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Score and rank	P	Ages n/a	LA	2010		01F_183SC_10_V1

Numerator:

Numerator data - Scores in the ID 2010 are at LSOA level 38 separate indicators grouped into seven distinct domains reflecting different aspects of deprivation. These domains are:
- Income Deprivation;
- Employment Deprivation;
- Health Deprivation and Disability;
- Education, Skills and Training Deprivation;
- Barriers to Housing and Services;
- Crime;
- Living Environment Deprivation.

Individual domains are used as measures of each specific form of deprivation. They are also combined, using appropriate weights, into a single overall Index of Multiple Deprivation 2010 (IMD 2010) which can be used to rank every small area in England according to the deprivation experienced by the people living there. The IMD 2010 summary measures are:
- Local Concentration;
- Extent;
- Average Score;
- Average Rank;
- Scale (for Income and Employment only).

Source of numerator data - Department for Communities and Local Government (DCLG).

Historically, the Indices of Deprivation have been constructed by the Social Disadvantage Research Centre, Oxford Institute of Social Policy at the University of Oxford.

Comments on numerator data - The ID 2010 combine a number of indicators, chosen to cover a range of economic, social and housing issues, into a single deprivation score for each small area in England. This allows each area to be ranked relative to one another according to their level of deprivation.

Most of the indicators used in the current statistics are from 2008 although some of the indicators come from other time points such as the 2001 Census.

The Indices of Deprivation 2010 (ID 2010) update information provided in the Indices of Deprivation 2007 and 2004. In contrast to other earlier produced deprivation indices based on 1991 Census data, most of the indicators used in the ID 2004, ID 2007 and ID 2010 can be updated regularly. The Local Authority district level presentations of the ID 2004 included only employment scale, income scale, average of ward scores, average of ward ranks, extent of deprivation, and local concentration. See Annex 1 for more details on ID 2004.

Denominator:

Denominator data - Population estimates at LSOA level for mid-2008.

Source of denominator data - Office for National Statistics' Small Area Population Estimation Unit.

Comments on denominator data - The majority of the indicators in the ID 2010 use denominators derived from the above population estimates. Certain indicators use numerators and denominators derived from the same data source, including the few indicators derived from the 2001 Census.

Statistical methods:

The English ID 2010 are based on broadly the same methodology and using the same approach and structure as the previous version in 2007 and it is possible to compare the current pattern of deprivation with the pattern in 2007. However, deprivation scores cannot be compared between 2010 and 2007 because an area's score is affected by the scores of every other area; so it is impossible to tell whether a change in score is a real change in the deprivation level of an area, or whether it is due to the scores of other areas going up or down. Further information on the background, methodology and guidance on ID 2010 can be found in the technical report (see "Further reading").

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. McLennan, D, Barnes H, Noble M, Davies J, Garratt E, Dibben C. *The English Indices of Deprivation 2010: Technical Report. .* London: Department for Communities and Local Government. March 2011. Available at: http://www.communities.gov.uk/documents/statistics/pdf/1870718.pdf
2. *The English Indices of Deprivation 2010.* London: Department for Communities and Local Government. March 2011. Available at: http://www.communities.gov.uk/documents/statistics/pdf/1871208.pdf
3. Noble, M, McLennan D, Wilkinson K, Whitworth A, Barnes H. *The English Indices of Deprivation 2007: Summary.* London: Department for Communities and Local Government, 2008. Available at: http://www.communities.gov.uk/documents/communities/pdf/733520.pdf
4. Alcock, P. *Updating the English Indices of Deprivation 2004. Stage Two 'Blueprint' Peer Review.* London: Department for Communities and Local Government. May 2007. Available at: http://www.communities.gov.uk/documents/communities/pdf/321700.pdf

Updated: June 2011

ONS area classification

Purpose:

To provide a simple indicator of the characteristics of an area, and of the similarity between areas, for comparison or targeting purposes, and as a variable for analysis with other data.

Definition of indicator and its variants:

The Office for National Statistics (ONS) Area Classification based on data from the 2001 Census.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Type of area based on census variables	P	Ages n/a	LA, PCO	2001		01G_005SC_01_V4

Numerator:

Numerator data - The Local Authorities (LAs) and Primary Care Organisations (PCOs) in England classified hierarchically into twelve groups.

Source of numerator data - ONS 2001 Census Local Base Statistics.

Comments on numerator data - The LAs comprising each ONS area group are shown in Annex 7C. The Office for National Statistics has calculated the classification to Local Authority boundaries as at April 2003. Throughout the *Compendium,* the mean indicator values given for the twelve ONS area classification groups are computed from the values for constituent LAs.

On the 1 April 2009 there was a local government reorganisation that created nine unitary authorities in England. This classification has been updated to reflect these changes. As part of the update it was decided that the data both standardised and unstandardised would remain unchanged for areas unaffected by the boudary reorganisation. To achieve consistency in the standarised data for the newly formed areas the median and percentiles from the previous old boundary dataset were used. For more information see: http://www.statistics.gov.uk/about/methodology_by_theme/area_classification/datasets.asp

The rectructured Primary Care Organisations (PCOs) comprising each ONS area group are shown in Annex 8B which has been updated. There are 152 PCOs with boundaries as at September 2008.

The classification has been produced for the whole of the UK for the first time at three hierarchal levels: supergroup, group, and sub-group. There are eight clusters (including Northern Ireland Countryside) at supergroup level, thirteen clusters at group level, and twenty-four at sub-group level. An example of a supergroup is "Cities and Services". Names have been given to each supergroup and group. These names have been chosen to represent the group as a whole and may not accurately describe each individual LA or PCO. However, all LAs and PCOs within a group share similar population characteristics.

Supergroups, groups and sub-groups each have a set of Cluster Summaries. These present the main characteristics of each cluster in text and on a "radar chart". A radar chart looks like a wheel with a number of spokes. Each spoke of the wheel represents a "variable" - a characteristic of the population. Points are plotted to indicate values for each variable relative to the mean of the population. For more information on the hierarchy of groupings and how to use the classification, see the user guide, available via the following link: http://www.statistics.gov.uk/about/methodology_by_theme/area_classification/downloads/User_Guide.pdf

Files that contain statistical summaries of each collection and highlight the main socio-economic and demographic characteristics of the clusters in the collection are available via the ONS website.

Denominator:

Denominator data - See "Numerator data".

Source of denominator data - See "Numerator data".

Comments on denominator data - See "Numerator data".

Statistical methods:

A statistical technique known as "Cluster Analysis" was used, in particular, Ward's method. Further information about the methodology for Cluster Analysis is shown in Annexes 7A and 8A. Information is also presented for 42 variables (different characteristics of the population). These variables are listed in Annex 7B.

The ONS area classification is presented in a new graphical display method called Scalable Vector Graphics (SVG) and in pdf format on the National Statistics Neighbourhood Statistics website:
http://www.statistics.gov.uk/about/methodology_by_theme/area_classification/maps.asp

An alternative method of using the classifications for each authority is to find the authorities that are most similar to it; these are called "Corresponding Authorities". To measure similarity between authorities the Squared Euclidean Distance (SED) has been used, which is based solely on the 42 variables used in the main classification. Thus corresponding authorities could be geographically far apart, e.g. Salford and Gateshead or Isle of Wight and Scarborough. In this context, the range is defined as the range between the two most similar authorities and the two most dissimilar authorities.

Two authorities are considered to be:
- Extremely similar if they have an SED of less than 1% of the range between the two most similar authorities and the two most dissimilar authorities;
- Very similar if they have an SED of less than 2.5% of the range;
- Similar if they have an SED of less than 5% of the range;
- Somewhat similar if they have an SED of less than 10% of the range;
- Not similar if their SEDs differ by more than 10% of the total range.

The authorities in urban areas, especially London, have more extreme values and so are less likely to be similar to other authorities. An example of this is Tower Hamlets, whose four corresponding authorities are all classified "Not Similar".

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Bailey S, Charlton J, Dollamore G, Fitzpatrick J. *The ONS Classification of Local and Health Authorities of Great Britain: Revised for Authorities in 1999*. Office for National Statistics, 1999.
2. Bailey S, Charlton J, Dollamore G, Fitzpatrick J. Which authorities are alike. *Office for National Statistics Population Trends,* Vol. 98, 1999: 29-41.
3. Martin, D. Geography for the 2001 Census in England and Wales. *Office for National Statistics Population Trends,* Vol. 108, 2002: 7-15.
4. Office for National Statistics. *National Statistics 2001 Area Classification of Local Authorities*. Office for National Statistics website:
   http://www.statistics.gov.uk/about/methodology_by_theme/area_classification/
5. Smith J, Chappell R, Whitworth A. Duncan C. Implications of 2001 Census for Local Authority district mid-year population estimates. *Office for National Statistics Population Trends*, Vol. 113, 2003: 20-31.

Updated: January 2011

Composition of the Census count of resident population

Purpose:

To provide 2001 Census based information about household status of resident population.

Definition of indicator and its variants:

The Census count of resident population and the percentage who were present and resident in households and resident in communal establishments.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number and percent of residents in households	P	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2001		01H_006VS_01_V2

Note: Data for PCOs have been produced from "best fit" of Output Areas.

Numerator:

Numerator data - Numbers of residents in each of the component groups.

Source of numerator data – Office for National Statistics (ONS): Key Statistics Table 1 (KS01). Data processed by the Department of Health (DH).

Comments on numerator data - The ONS Area Classification values for Census indicators are computed from Local Authority (LA) data. Strategic Health Authority (SHA) values are computed from Primary Care Organisation (PCO) data rather than LA.

Denominator:

Denominator data - The total number of residents in the area.

Source of denominator data - ONS: Key Statistics Table 1 (KS01). Data processed by DH.

Comments on denominator data - The count of resident population in households and communal establishments is based on statistics relating to where people usually live.

The following two groups of enumerated persons were separately identified:
* Resident in households - persons enumerated as resident in a household;
* Resident in communal establishments - persons enumerated in a communal establishment, which was recorded as being their usual residence.

In addition to these two groups enumerated by the Census, the resident population of an area included the following group: Imputed residents in households - for those absent households for which no completed census form was received by ONS, certain data were imputed. The imputed items were those that were fully processed for 100% of records. The method of deriving these data was to draw on information from similar absent households in the same neighbourhood for which completed forms were returned. Appropriate matches were identified by using basic information about the households collected by enumerators.

Statistical methods:

Census data for PCOs were produced by ONS on the basis of best fit using two different methods. The 2001 Census Key Statistics tables were produced on the basis of best fit of Output Areas to PCOs, and Standard tables (which are generally the more detailed tables, showing cross-tabulations between different variables) for health areas were produced on the basis of best fit of wards. The "two-method approach" used by ONS is a problem, in that the same variables for health areas appear as different totals in the Key Statistics and Standard tables. Some of these differences are also "significant". For a more detailed explanation see: http://www.statistics.gov.uk/census2001/cn_96.asp

Disclosure protection measures applied by the ONS to 2001 Census output for England and Wales are in place in order to prevent the inadvertent release of information about identifiable individuals. As a result, totals may sometimes not add up. For more details about disclosure control methods see: http://www.statistics.gov.uk/census2001/op5.asp

Percentages were obtained by dividing numbers of residents in each of the component groups by the total number of residents in the area.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics*. The Census 2001 homepage*. Office for National Statistics, 2004. Available at: http://www.statistics.gov.uk/census2001/
2. Benton, P. White, I. *Looking beyond the 2001 Census, Office for National Statistics Population Trends*, Vol 113, 2003: 7-10.
3. Office for National Statistics. *Local Authority information pages*. Available at: http://www.statistics.gov.uk/census2001/la.asp
4. Martin, D. Geography for the 2001 Census in England and Wales. *Office for National Statistics Population Trends*, Vol 108, 2002: 7-15.
5. Chappell R, Duncan C, Smith J, Whitworth A. Implications of 2001 Census for local authority district mid-year population estimates. *Office for National Statistics Population Trends*, Vol 113, 2003: 12.

Updated: December 2009

Census count of resident population by age and sex

Purpose:

To provide 2001 Census based information about distribution of resident population by age and gender.

Definition of indicator and its variants:

The Census count of resident males and females by age.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of residents	MFP	All ages, <5, 5-14, 15-24, 25-44, 45-64, 65-74, 75-84, 85+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2001		01I_007NO_01_V2

Note: Data for PCOs have been produced from "best fit" of Output Areas.

Numerator:

Numerator data - Numbers of residents in each age and sex category.

Source of numerator data – Office for National Statistics (ONS): Standard Table 01 (S01). Data processed by Department of Health (DH).

Comments on numerator data - The ONS Area Classification values for Census indicators are computed from Local Authority (LA) data. Strategic Health Authority (SHA) values are computed from Primary Care Organisation (PCO) data rather than LA.

Denominator:

Denominator data - Not applicable.

Source of denominator data - Not applicable.

Comments on denominator data - Not applicable.

Statistical methods:

Census data for PCOs were produced by ONS on the basis of best fit using two different methods. The 2001 Census Key Statistics tables were produced on the basis of best fit of Output Areas to PCOs, and Standard tables (which are generally the more detailed tables, showing cross-tabulations between different variables) for health areas were produced on the basis of best fit of wards. The "two-method approach" used by ONS is a problem, in that the same variables for health areas appear as different totals in the Key Statistics and Standard tables. Some of these differences are also "significant". For a more detailed explanation see:
http://www.statistics.gov.uk/census2001/cn_96.asp

Disclosure protection measures applied by the ONS to 2001 Census output for England and Wales are in place in order to prevent the inadvertent release of information about identifiable individuals. As a result, totals may sometimes not add up. For more details about disclosure control methods see:
http://www.statistics.gov.uk/census2001/op5.asp

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. *The Census 2001 homepage*. Office for National Statistics, 2004. Available at: http://www.statistics.gov.uk/census2001/
2. Benton, P. White, I. *Looking beyond the 2001 Census, Office for National Statistics Population Trends*, Vol 113, 2003: 7-10.

3. Office for National Statistics. *Local Authority information pages*. Available at: http://www.statistics.gov.uk/census2001/la.asp
4. Martin, D. Geography for the 2001 Census in England and Wales. *Office for National Statistics Population Trends*, Vol 108, 2002: 7-15.
5. Chappell R, Duncan C, Smith J, Whitworth A. Implications of 2001 Census for local authority district mid-year population estimates. *Office for National Statistics Population Trends*, Vol 113, 2003: 12.

Updated: December 2009

Communal establishments and their populations

Purpose:

To provide 2001 Census based information about the residents of communal establishments.

Definition of indicator and its variants:

Information on a variety of communal establishments and their residents.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number and percent of residents	P	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2001		01J_008VS_01_V2

Note: Data for PCOs have been produced from "best fit" of Output Areas.

Numerator:

Numerator data - Numbers of residents in each type of establishment. For each type of establishment the following Census counts are presented:
- number of establishments;
- number of residents (excluding staff and families);
- number of resident staff and families;
- number of residents in medical and care establishments, and other establishments with a limiting long-term illness.

Figures are presented for the following Communal establishments:

1) Medical and care establishments:
- all establishments;
- NHS - psychiatric;
- Local Authority - Children's homes;
- Local Authority - Other;
- Housing Association homes and hostels;
- nursing homes (non-NHS/LA);
- residential care homes (non-NHS/LA);
- children's homes (non-NHS/LA);
- other.

2) Other establishments.

Source of numerator data – Office for National Statistics (ONS): Key Statistics Table 23 (KS23) and Standard Table 126 (S126). Data processed by the Department of Health (DH).

Comments on numerator data - The ONS Area Classification values for Census indicators are computed from Local Authority (LA) data. Strategic Health Authority (SHA) values are computed from Primary Care Organisation (PCO) data rather than LA.

Communal establishments are those in which some form of communal catering is provided. The establishments for which separate figures are presented are set out below.

- NHS hospitals/homes include hospitals, nursing homes, rehabilitation units and nurses' homes and hostels which are either directly managed or managed by Trusts. The term "psychiatric" covers hospitals for the mentally ill, including Special Hospitals;
- Local Authority homes only include those managed by a Local Authority;
- Housing Association homes and hostels include those managed by a Housing Association (but excluding children's homes) and almshouses registered with the Housing Corporation;
- Nursing homes (non-NHS/LA) include nursing homes, convalescent homes and hospices run by voluntary, charitable and private organisations;
- Residential care homes (non-NHS/LA) include homes registered with a Local Authority and those exempt from registration managed by voluntary, charitable, and private organisations;
- Other non-medical and care establishments cover most types of establishments which provide board and accommodation for visitors (including hotels, boarding houses, holiday camps, apartments,

YHA/YMCA/YWCA hostels, other types of hostels, residential clubs, common lodging houses, and reception centres with resident staff);
- Households with 5 or more paying guests and/or resident staff are included, and conversely very small hotels are treated as households.

Denominator:

Denominator data - The total number of residents in the area.

Source of denominator data - ONS: Key Statistics Table 23 (KS23). Data processed by DH.

Comments on denominator data - None.

Statistical methods:

Census Data for PCOs were produced by ONS on the basis of best fit using two different methods. The 2001 Census Key Statistics tables were produced on the basis of best fit of Output Areas to PCOs, and Standard tables (which are generally the more detailed tables, showing cross-tabulations between different variables) for health areas were produced on the basis of best fit of wards. The "two-method approach" used by ONS is a problem, in that the same variables for health areas appear as different totals in the Key Statistics and Standard tables. Some of these differences are also "significant". For a more detailed explanation see:
http://www.statistics.gov.uk/census2001/cn_96.asp

Disclosure protection measures applied by the ONS to 2001 Census output for England and Wales are in place in order to prevent the inadvertent release of information about identifiable individuals. As a result, totals may sometimes not add up. For more details about disclosure control methods see:
http://www.statistics.gov.uk/census2001/op5.asp

Percentages were obtained by dividing numbers of residents in each type of establishment by the appropriate total number of residents in the area.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. *The Census 2001 homepage*. Office for National Statistics, 2004. Available at: http://www.statistics.gov.uk/census2001/
2. Benton, P. White, I. *Looking beyond the 2001 Census, Office for National Statistics Population Trends*, Vol 113, 2003: 7-10.
3. Office for National Statistics. *Local Authority information pages*. Available at: http://www.statistics.gov.uk/census2001/la.asp
4. Martin, D. Geography for the 2001 Census in England and Wales. *Office for National Statistics Population Trends*, Vol 108, 2002: 7-15.
5. Chappell R, Duncan C, Smith J, Whitworth A. Implications of 2001 Census for local authority district mid-year population estimates. *Office for National Statistics Population Trends*, Vol 113, 2003: 12.

Updated: December 2009

Economic position of residents

Purpose:

To provide 2001 Census based information about the economic position of resident populations.

Definition of indicator and its variants:

Employment status of resident populations.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number and percent of persons	P	16-74	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2001		01K_011VS_01_V2

Note: Data for PCOs have been produced from "best fit" of Output Areas.

Numerator:

Numerator data - Numbers of residents by economic status (employed, unemployed, full-time students, economically inactive students, retired, looking after home/family, permanently sick/disabled, others).

Source of numerator data – Office for National Statistics (ONS): Key Statistics Table 9a (KS09a). Data processed by the Department of Health (DH).

Comments on numerator data - The ONS Area Classification values for Census indicators are computed from Local Authority (LA) data. Strategic Health Authority (SHA) values are computed from Primary Care Organisation (PCO) data rather than LA.

The definition of "economically active" was largely determined from answers to more than one question, including:

- "Last week, were you doing any work: as an employee, or on a Government sponsored training scheme or as self-employed/freelance, or in your own/family business?";
- "Last week, were you any of the following: retired, student, looking after home/family, permanently sick/disabled or none of the above?".

The number of persons employed includes those working for an employer full- or part-time and the self-employed. It excludes those on a government employment or training scheme or in full-time education. The unemployed comprise those looking for a job, waiting to start a job, on a government scheme, or in full-time education. People wanting a job but prevented from looking by temporary sickness or a holiday are included in the count of unemployed. The retired are those who have ceased paid work completely.

Denominator:

Denominator data - The total number of residents in the area.

Source of denominator data - ONS: Key Statistics Table 9a (KS09a). Data processed by DH.

Comments on denominator data - None.

Statistical methods:

Census data for PCOs were produced by ONS on the basis of best fit using two different methods. The 2001 Census Key Statistics tables were produced on the basis of best fit of Output Areas to PCOs, and Standard tables (which are generally the more detailed tables, showing cross-tabulations between different variables) for health areas were produced on the basis of best fit of wards. The "two-method approach" used by ONS is a problem, in that the same variables for health areas appear as different totals in the Key Statistics and Standard tables. Some of these differences are also "significant". For a more detailed explanation see:
http://www.statistics.gov.uk/census2001/cn_96.asp

Disclosure protection measures applied by the ONS to 2001 Census output for England and Wales are in place in order to prevent the inadvertent release of information about identifiable individuals. As a result, totals may sometimes not add up. For more details about disclosure control methods see:
http://www.statistics.gov.uk/census2001/op5.asp

Percentages were obtained by dividing numbers of residents with the relevant economic position by the corresponding total number of residents in the area.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. *The Census 2001 homepage*. Office for National Statistics, 2004. Available at: http://www.statistics.gov.uk/census2001/

Updated: December 2009

Ethnic group and country of birth

Purpose:

To provide 2001 Census based information about the ethnic composition of resident populations.

Definition of indicator and its variants:

Residents whose ethnic group was:
- White - British, Irish, Other;
- Mixed - White and Black Caribbean, White and Black African, White and Asian, Other Mixed;
- Asian or Asian British - Indian, Pakistani, Bangladeshi, Other Asian;
- Black or Black British - Black Caribbean, Black African, Other Black;
- Chinese or other ethnic group - Chinese, Other Ethnic Group.

Also number of residents by country of birth - Great Britain & Northern Ireland, Republic of Ireland, Other European Union (EU) (as at 29/02/2001), Rest of the World.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number and percent of residents	P	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2001		01L_012VS_01_V2

Note: Data for PCOs have been produced from "best fit" of Output Areas.

Numerator:

Numerator data - Numbers of residents by ethnic group and country of birth.

Source of numerator data – Office for National Statistics (ONS): Key Statistics Tables 05 and 06 (KS05 and KS06). Data processed by the Department of Health (DH).

Comments on numerator data - The ONS Area Classification values for Census indicators are computed from Local Authority (LA) data. Strategic Health Authority (SHA) values are computed from Primary Care Organisation (PCO) data rather than LA.

Ethnic group is based on the ethnic or racial group to which the person considered they belonged. The question provided for sixteen responses (as detailed above). Those replying "Other White", "Other Mixed", "Other Asian", "Other Black", or "Other - Other Ethnic Group" were asked to describe the group to which they belonged and some of these were reallocated to one of the other categories in tables.

Country of birth outside the UK was based on writing in the present name of the country in which the person's birthplace is situated.

Denominator:

Denominator data - The total number of residents in the area.

Source of denominator data - ONS: Key Statistics Table 02 (KS02). Data processed by DH.

Comments on denominator data - None.

Statistical methods:

Census data for PCOs were produced by ONS on the basis of best fit using two different methods. The 2001 Census Key Statistics tables were produced on the basis of best fit of Output Areas to PCOs, and Standard tables (which are generally the more detailed tables, showing cross-tabulations between different variables) for health areas were produced on the basis of best fit of wards. The "two-method approach" used by ONS is a problem, in that the same variables for health areas appear as different totals in the Key Statistics and Standard tables. Some of these differences are also "significant". For a more detailed explanation see:
http://www.statistics.gov.uk/census2001/cn_96.asp

Disclosure protection measures applied by the ONS to 2001 Census output for England and Wales are in place in order to prevent the inadvertent release of information about identifiable individuals. As a result, totals may sometimes not add up. For more details about disclosure control methods see:
http://www.statistics.gov.uk/census2001/op5.asp

Percentages were obtained by dividing numbers in each group by the total number of residents in the area.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1.   Office for National Statistics. *The Census 2001 homepage*. Office for National Statistics, 2004. Available at: http://www.statistics.gov.uk/census2001/

Updated: December 2009

Residents in households

Purpose:

To provide 2001 Census based information about household characteristics of resident populations.

Definition of indicator and its variants:

Residents in households, which were: owner-occupied, privately rented, rented from a Local Authority, overcrowded, without central heating, lacking or sharing basic amenities, without a car, with two or more cars.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number and percent of residents	P	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2001		01M_013VS_01_V2

Note: Data for PCOs have been produced from "best fit" of Output Areas.

Numerator:

Numerator data - Numbers of residents in each household category. For number of residents without a car or with two or more cars it is the number of residents aged 17 or over.

Source of numerator data – Office for National Statistics (ONS): Key Statistics Table 01 (KS01), and Standard Tables: S17, S18, S51 and S59. Data processed by the Department of Health (DH).

Comments on numerator data - The ONS Area Classification values for Census indicators are computed from Local Authority (LA) data. Strategic Health Authority (SHA) values are computed from Primary Care Organisation (PCO) data rather than LA.

Answers to the Census question on how each household occupied their accommodation provided the information on housing tenure. For the purposes of this indicator, owner-occupiers are those who owned the accommodation outright or were buying through a mortgage or loan; privately rented includes those renting furnished or unfurnished accommodation from a landlord (other than with a job or business or from a Local Authority, a New Town Development Corporation, a charitable or Housing Action trust, or a Housing Association); and Local Authority tenants are those renting from a local council.

Overcrowded households are considered to be those with more than one person per room (where the count of rooms excluded small kitchens, bathrooms and toilets). A household was without central heating if no living rooms or bedrooms were centrally heated. It lacked or shared basic amenities if it did not have sole use of a bath or shower and an inside flush toilet.

The number of cars is based on the cars or vans (excluding those used only for carrying goods) normally available to any members of the household aged 17 or over.

Denominator:

Denominator data - The total number of residents in the area. For residents with no car or having two or more cars, it is the number of residents aged 17 or over.

Source of denominator data - ONS: Key Statistics Table 01 (KS01), and Standard Table 01 (S01) for number of residents aged 17+. Data processed by DH.

Comments on denominator data - None.

Statistical methods:

Census data for PCOs were produced by ONS on the basis of best fit using two different methods. The 2001 Census Key Statistics tables were produced on the basis of best fit of Output Areas to PCOs, and Standard tables (which are generally the more detailed tables, showing cross-tabulations between different variables) for health areas were produced on the basis of best fit of wards. The "two-method approach" used by ONS is a problem, in that the same variables for health areas appear as different totals in the Key Statistics and Standard tables. Some of these differences are also "significant". For a more detailed explanation see: http://www.statistics.gov.uk/census2001/cn_96.asp

Disclosure protection measures applied by the ONS to 2001 Census output for England and Wales are in place in order to prevent the inadvertent release of information about identifiable individuals. As a result, totals may sometimes not add up. For more details about disclosure control methods see:
http://www.statistics.gov.uk/census2001/op5.asp

The percentage of residents in households with each characteristic was obtained by dividing the number of such residents by the total number of residents in households.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. *The Census 2001 homepage*. Office for National Statistics, 2004. Available at:
    http://www.statistics.gov.uk/census2001/

Updated: December 2009

Dependent children in households

Purpose:

To provide 2001 Census based information about dependent children and types of households.

Definition of indicator and its variants:

Dependent children in resident households;
- Lone parent families (with dependent children);
- Dependent children in resident households which were without central heating;
- Dependent children in resident households which were overcrowded (with more than one person per room).

Note: A dependent child is a person in a household aged 0 to 15 (whether or not in a family) or a person aged 16 to 18 who is a full time student in a family with parent(s).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number and percent	P	0-18	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2001		01N_014VS_01_V2

Note: Data for PCOs have been produced from "best fit" of Output Areas.

Numerator:

Numerator data - Numbers of dependent children in households with particular characteristics.

Source of numerator data – Office for National Statistics (ONS): Standard Tables 04, 06 and 54. Data processed by the Department of Health (DH).

Comments on numerator data - The ONS Area Classification values for Census indicators are computed from Local Authority (LA) data. Strategic Health Authority (SHA) values are computed from Primary Care Organisation (PCO) data rather than LA.

For the purposes of this indicator, lone parent households can be classified as married (or re-married) if they denote their marital status as married (or re-married) but have no spouse or partner identified in the relationship matrix, and overcrowded households are those with more than one person per room (where the count of rooms excluded bathrooms). The occupancy rating assumes that every household, including one person households, requires a minimum of two common rooms (excluding bathrooms).

A household is without central heating if no living rooms or bedrooms are centrally heated.

In general a household's accommodation is defined as an unshared dwelling if all the rooms are behind a door that only that household can use.

Denominator:

Denominator data - The total number of dependent children in resident households.

Source of denominator data - ONS: Standard Tables – 04, 06 and 54. Data processed by DH.

Comments on denominator data - For those absent households for which no completed Census form was received by ONS, certain data were imputed.

Statistical methods:

Census data for PCO were produced by ONS on the basis of best fit using two different methods. The 2001 Census Key Statistics tables were produced on the basis of best fit of Output Areas to PCOs, and Standard tables (which are generally the more detailed tables, showing cross-tabulations between different variables) for health areas were produced on the basis of best fit of wards. The "two-method approach" used by ONS is a problem, in that the same variables for health areas appear as different totals in the Key Statistics and Standard tables. Some of these differences are also "significant". For a more detailed explanation see:
http://www.statistics.gov.uk/census2001/cn_96.asp

Disclosure protection measures applied by the ONS to 2001 Census output for England and Wales are in place in order to prevent the inadvertent release of information about identifiable individuals. As a result, totals may sometimes not add up. For more details about disclosure control methods see: http://www.statistics.gov.uk/census2001/op5.asp

Percentages were obtained by dividing numbers of dependent children in households with the relevant characteristic by the total number of dependent children in households.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. *The Census 2001 homepage*. Office for National Statistics, 2004. Available at: http://www.statistics.gov.uk/census2001/

Updated: December 2009

Pensioners in households

Purpose:

To provide 2001 Census based information about pensioners and types of households.

Definition of indicator and its variants:

Pensioners in households who were: living alone, without central heating, without a car.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number and percent of residents in households	P	<75, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2001		01O_015VS_01_V2

Note: Data for PCOs have been produced from "best fit" of Output Areas.

Numerator:

Numerator data - Numbers of pensioners in households.

Source of numerator data – Office for National Statistics (ONS): Standard Tables 01. Data processed by the Department of Health (DH).

Comments on numerator data - The ONS Area Classification values for Census indicators are computed from Local Authority (LA) data. Strategic Health Authority (SHA) values are computed from Primary Care Organisation (PCO) data rather than LA.

Pensioners are men aged 65 and over and women aged 60 and over. The "other type of pensioner" is one that lives in a communal establishment i.e. a nursing home, hospital etc.

A household comprises one person living alone, or a group of people (not necessarily related) living at the same address with common housekeeping - that is, sharing either a living room or sitting-room or at least one meal a day.

Denominator:

Denominator data - The total number of residents in the area.

Source of denominator data - ONS: Standard Table 01. Data processed by DH.

Comments on denominator data - None.

Statistical methods:

Census data for PCOs were produced by ONS on the basis of best fit using two different methods. The 2001 Census Key Statistics tables were produced on the basis of best fit of Output Areas to PCOs, and Standard tables (which are generally the more detailed tables, showing cross-tabulations between different variables) for health areas were produced on the basis of best fit of wards. The "two-method approach" used by ONS is a problem, in that the same variables for health areas appear as different totals in the Key Statistics and Standard tables. Some of these differences are also "significant". For a more detailed explanation see: http://www.statistics.gov.uk/census2001/cn_96.asp

Disclosure protection measures applied by the ONS to 2001 Census output for England and Wales are in place in order to prevent the inadvertent release of information about identifiable individuals. As a result, totals may sometimes not add up. For more details about disclosure control methods see: http://www.statistics.gov.uk/census2001/op5.asp

The percentage of pensioners in households was obtained by dividing the number resident in households at each age by the corresponding total number of residents in the area. The percentage of pensioners in households with each characteristic was obtained by dividing the number of such pensioners at each age by the corresponding total number resident in households.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. *The Census 2001 homepage*. Office for National Statistics, 2004. Available at: http://www.statistics.gov.uk/census2001/

Updated: December 2009

Educational qualifications

Purpose:

To provide 2001 Census based information about the educational qualifications of the adult population.

Definition of indicator and its variants:

Residents with qualifications obtained after reaching the age of 16.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number and percent of residents	P	16-74, 16-pensionable age	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2001		01P_016VS_01_V2

Note: Data for PCOs have been produced from "best fit" of Output Areas.

Numerator:

Numerator data - Number of residents with qualifications, based on a 10% sample.

Source of numerator data – Office for National Statistics (ONS): Standard Table 105 (S105). Data processed by the Department of Health (DH).

Comments on numerator data - The ONS Area Classification values for Census indicators are computed from Local Authority (LA) data. Strategic Health Authority (SHA) values are computed from Primary Care Organisation (PCO) data rather than LA.

The Census question on qualifications sought details of all professional, educational and vocational qualifications obtained after reaching the age of 16, excluding any that would normally be obtained at school.

Denominator:

Denominator data - The total number of residents aged 16 to 74, and also estimated total number of residents aged 16 to pensionable age in a 10% sample.

Source of denominator data - ONS: Standard Table 105 (S105). Data processed by DH.

Comments on denominator data - None.

Statistical methods:

Census data for PCOs were produced by ONS on the basis of best fit using two different methods. The 2001 Census Key Statistics tables were produced on the basis of best fit of Output Areas to PCOs, and Standard tables (which are generally the more detailed tables, showing cross-tabulations between different variables) for health areas were produced on the basis of best fit of wards. The "two-method approach" used by ONS is a problem, in that the same variables for health areas appear as different totals in the Key Statistics and Standard tables. Some of these differences are also "significant". For a more detailed explanation see:
http://www.statistics.gov.uk/census2001/cn_96.asp

Disclosure protection measures applied by the ONS to 2001 Census output for England and Wales are in place in order to prevent the inadvertent release of information about identifiable individuals. As a result, totals may sometimes not add up. For more details about disclosure control methods see:
http://www.statistics.gov.uk/census2001/op5.asp

The percentage of residents aged 18 and over with qualifications was obtained by dividing the number of such residents in the sample by the total number of residents aged 18 and over in the sample. To carry out a comparable calculation to obtain the percentage at ages between 18 and pensionable age, it was first necessary to estimate the total number of residents of this age in the 10% sample. This estimate was obtained by multiplying the equivalent figure from the full count by the sampling fraction among household residents of working age; this method differs from that used in the 1993 supplement.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several

organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. *The Census 2001 homepage*. Office for National Statistics, 2004. Available at: http://www.statistics.gov.uk/census2001/

Updated: December 2009

Social class as defined by occupation of household reference person

Purpose:

To provide 2001 Census based information about the social class of resident populations as defined by occupation of household head.

Definition of indicator and its variants:

Residents in households with an economically active household head, by the social class of the head of household.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number and percent of residents in households	P	16 to 74 residents, 16-64 economically active	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2001		01Q_017VS_01_V2

Note: Data for PCOs have been produced from "best fit" of Output Areas.

Numerator:

Numerator data - Numbers of residents in households with household reference persons aged 16-74 in the following National Statistics Socio-Economic Classifications (NS-SECs):

- Large employers and higher managerial occupations;
- Higher Professional Occupations;
- Lower Managerial and Professional Occupations;
- Intermediate Occupations;
- Small Employers and Own Account Workers;
- Large Supervisory and Technical Occupations;
- Semi-Routine Occupations;
- Routine Occupations;
- Never Worked;
- Long-term Unemployed;
- Full-time Students;
- Not classifiable for other reasons.

Source of numerator data – Office for National Statistics (ONS): Standard Table S45 (S45). Data processed by the Department of Health (DH).

Comments on numerator data - The ONS Area Classification values for Census indicators are computed from Local Authority (LA) data. Strategic Health Authority (SHA) values are computed from Primary Care Organisation (PCO) data rather than LA.

The definition of "economically active" was largely determined from answers to more than one question, including:

- "Last week, were you doing any work: as an employee, or on a Government sponsored training scheme or as self-employed/freelance, or in your own/family business?";
- "Last week, were you any of the following: retired, student, looking after home/family, permanently sick/disabled or none of the above?";
- "Were you actively looking for any kind of paid work during the last 4 weeks?".

The economically inactive were those allocated to the following categories: students, permanently sick, retired, and other inactive (including looking after home or family).

The National Statistics Socio-Economic Classification (NS-SEC) was derived from information provided on occupation and employment status. Persons aged 16 and over were asked to provide details of their main job in the previous week (if they had a paid job in that week) or of their most recent job. Anyone with no previous paid job was instructed to give no further occupational information (including many housewives, elderly retired, permanently sick and young or long-term unemployed).

The household reference person (HRP) was the first person entered on the form aged 16 and over and usually resident at the address of enumeration. No reference person was identified in households consisting entirely of visitors.

"Not classifiable for other reasons" included people whose occupation had not been coded and those who could not be allocated to an NS-SEC category.

In the NS-SEC classification all full-time students were recorded in the full-time student category regardless of whether they were economically active or not.

For long-term unemployed the year last worked is 1999 or earlier.

Denominator:

Denominator data - The total number of household residents in the sample.

Source of denominator data - ONS: Standard Table S45 (S45). Data processed by DH.

Comments on denominator data - None

Statistical methods:

Census data for PCOs were produced by ONS on the basis of best fit using two different methods. The 2001 Census Key Statistics tables were produced on the basis of best fit of Output Areas to PCOs, and Standard tables (which are generally the more detailed tables, showing cross-tabulations between different variables) for health areas were produced on the basis of best fit of wards. The "two-method approach" used by ONS is a problem, in that the same variables for health areas appear as different totals in the Key Statistics and Standard tables. Some of these differences are also "significant". For a more detailed explanation see:
http://www.statistics.gov.uk/census2001/cn_96.asp

Disclosure protection measures applied by the ONS to 2001 Census output for England and Wales are in place in order to prevent the inadvertent release of information about identifiable individuals. As a result, totals may sometimes not add up. For more details about disclosure control methods see:
http://www.statistics.gov.uk/census2001/op5.asp

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. *The Census 2001 homepage*. Office for National Statistics, 2004. Available at: http://www.statistics.gov.uk/census2001/
2. Office for National Statistics / Employment Department Group. *Standard Occupational Classification.* Volumes 1, 2 and 3. London: Her Majesty's Stationery Office, 1990.

Updated: December 2009

National Statistics Socio-Economic Classification (NS-SEC) as defined by own occupation

Purpose:

To provide 2001 Census based information about the National Statistics Socio-Economic (NS-SEC) Group of the population within each area as defined by own occupation.

Definition of indicator and its variants:

Economically active and non-active residents of households and those aged 16-64 who are economically active by National Statistics Socio-Economic classification as defined by own occupation.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number and percent of residents in households	MF	16-74 econ. active, 16-64 by SEC	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2001		01R_018VS_01_V2

Note: Data for PCOs have been produced from "best fit" of Output Areas.

Numerator:

Numerator data - Numbers of people aged 16-64 by National Statistics Socio-economic Classification (NS-SEC) and number aged 16-74 who were economically active in the following NS-SECs:

- Higher Managerial and Professional Occupations;
- Higher Professional Occupations;
- Lower Managerial and Professional Occupations;
- Intermediate Occupations;
- Small Employers and Own Account Workers;
- Lower Supervisory and Technical Occupations;
- Semi-Routine Occupations;
- Routine Occupations;
- Never Worked;
- Long-term Unemployed;
- Full-time Students;
- Not classifiable for other reasons.

Source of numerator data – Office for National Statistics (ONS): Standard Tables 23 and 26 (S23 and S26). Data processed by the Department of Health (DH).

Comments on numerator data - The ONS Area Classification values for Census indicators are computed from Local Authority (LA) data. Strategic Health Authority (SHA) values are computed from Primary Care Organisation (PCO) data rather than LA.

The definition of "economically active" was largely determined from answers to more than one question, including:

- "Last week, were you doing any work: as an employee, or on a Government sponsored training scheme or as self-employed/freelance, or in your own/family business?";
- "Last week, were you any of the following: retired, student, looking after home/family, permanently sick/disabled or none of the above?";
- "Were you actively looking for any kind of paid work during the last 4 weeks?".

The economically inactive were those allocated to the following categories: students, permanently sick, retired, and other inactive (including looking after home or family).

National Statistics Socio-Economic Classification (NS-SEC) was derived from information provided on occupation and employment status. Persons aged 16 and over were asked to provide details of their main job in the previous week (if they had a paid job in that week) or of their most recent job. Anyone with no previous paid job was instructed to give no further occupational information (including many housewives, elderly retired, permanently sick and young or long-term unemployed).

Denominator:

Denominator data - The total number of male and female residents aged 16-64, and household residents aged 16-74.

Source of denominator data - ONS: Standard Tables 23 and 26 (S23 & S26). Data processed by DH.

Comments on denominator data - For those absent households for which no completed Census form was received by ONS, certain data were imputed.

Statistical methods:

Census data for PCOs were produced by ONS on the basis of best fit using two different methods. The 2001 Census Key Statistics tables were produced on the basis of best fit of Output Areas to PCOs, and Standard tables (which are generally the more detailed tables, showing cross-tabulations between different variables) for health areas were produced on the basis of best fit of wards. The "two-method approach" used by ONS is a problem, in that the same variables for health areas appear as different totals in the Key Statistics and Standard tables. Some of these differences are also "significant". For a more detailed explanation see:
http://www.statistics.gov.uk/census2001/cn_96.asp

Disclosure protection measures applied by the ONS to 2001 Census output for England and Wales are in place in order to prevent the inadvertent release of information about identifiable individuals. As a result, totals may sometimes not add up. For more details about disclosure control methods see:
http://www.statistics.gov.uk/census2001/op5.asp

The percentages of men and women resident in households who were economically active or retired were obtained by dividing the number of such residents in the sample by the total number of men and women, respectively, in the sample who were resident in households.

The percentage distribution by NS-SEC was obtained by dividing the number of men and women resident in each area in each group by the total number of men and women resident in each area.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. *The Census 2001 homepage*. Office for National Statistics, 2004. Available at: http://www.statistics.gov.uk/census2001/
2. Office for National Statistics / Employment Department Group. *Standard Occupational Classification.* Volumes 1, 2 and 3. London: Her Majesty's Stationery Office, 1990.

Updated: December 2009

Lone parent families with dependent children

Purpose:

To provide 2001 Census based information about lone parent families with dependent children.

Definition of indicator and its variants:

Lone parent families with dependent children.

A dependent child is a person in a household aged 0-15 (whether or not in a family) or a person aged 16-18 who is a full-time student in a family with parent(s).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number and percent	P	0-18	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2001		01S_019VS_01_V3

Note: Data for PCOs have been produced from "best fit" of Output Areas.

Numerator:

Numerator data - Numbers of all lone parent families and lone parent families with dependent children.

Source of numerator data - ONS: Standard Table 06 (S06). Data were originally processed by the Department of Health (DH). Corrected data were downloaded via Census Area Statistics on the Web (Casweb).

Comments on numerator data - The ONS Area Classification values for Census indicators are computed from Local Authority (LA) data.

For the purposes of this table, a lone parent is defined as an adult with a dependent child living in a household with no other persons (whether related to that dependent child or not). Lone parents can be classified as married (or re-married) if they denote their marital status as married (or re-married), but have no spouse or partner identified in the relationship matrix.

Family units in a household were determined on the basis of the age, sex, marital status, long-term illness, and relationship in household of every resident in the household. A family comprises one of the following groups: married couple family (a married couple with or without their never-married children including childless couples); cohabiting couple family (two persons of the opposite sex living together as a couple with or without their never-married children, including childless couples); lone parent family (a mother or father together with her/his never-married children).

Grandparents residing with their grandchildren were counted as a family if the grandchildren's parents were not resident in the household. Households consisting entirely of persons aged under 16 were not grouped into families.

Denominator:

Denominator data - The total number of families in the sample, total number of families with dependent children in the sample, and total number of dependent children in families in the sample.

Source of denominator data - ONS: Standard Table 06 (S06). Data originally processed by the Department of Health (DH). Corrected data were downloaded via Census Area Statistics on the Web (Casweb).

Comments on denominator data - For those absent households for which no completed Census form was received by ONS, certain data were imputed.

Statistical methods:

Census data for PCOs were produced by ONS on the basis of best fit using two different methods. The 2001 Census Key Statistics tables were produced on the basis of best fit of Output Areas to PCOs, and Standard tables (which are generally the more detailed tables, showing cross-tabulations between different variables) for health areas were produced on the basis of best fit of wards. The "two-method approach" used by ONS is a problem, in that the same variables for health areas appear as different totals in the Key Statistics and Standard tables. Some of these differences are also "significant". For a more detailed explanation see:
http://www.statistics.gov.uk/census2001/cn_96.asp

Disclosure protection measures applied by the ONS to 2001 Census output for England and Wales are in place in order to prevent the inadvertent release of information about identifiable individuals. As a result, totals may sometimes not add up. For more details about disclosure control methods see: http://www.statistics.gov.uk/census2001/op5.asp

Percentages of all families that are lone parents with dependent children were obtained by dividing numbers of lone parent families with dependent children by the total number of families. Percentages of families with dependent children that are lone parent families were obtained by dividing numbers of lone parent families with dependent children by the total number of families with dependent children. Percentages of dependent children in families that are lone parent families were obtained by dividing the number of dependent children in lone parent families by the total number of dependent children in families.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. *The Census 2001 homepage*. Office for National Statistics, 2004. Available at: http://www.statistics.gov.uk/census2001/

Updated: August 2010

Standard of health in preceding 12 months

Purpose:

To provide 2001 Census based information about the health of resident populations over the preceding 12 months.

Definition of indicator and its variants:

Standard of health of residents over the preceding 12 months: Good, Fairly Good, or Not Good.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number and percent of residents in households	P	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2001		01T_501VS_01_V2

Note: Data for PCOs have been produced from "best fit" of Output Areas.

Numerator:

Numerator data - Number of household residents with good, fairly good or not good health.

Source of numerator data – Office for National Statistics (ONS): Standard Table 16 (S16). Data processed by the Department of Health (DH).

Comments on numerator data - The ONS Area Classification values for Census indicators are computed from Local Authority (LA) data. Strategic Health Authority (SHA) values are computed from Primary Care Organisation (PCO) data rather than LA.

A person's health is based on replies to the question "Over the last twelve months would you say your health has on the whole been: Good, Fairly good or Not good?"

Denominator:

Denominator data - The total number of residents in the area.

Source of denominator data - ONS: Standard Table 16 (S16). Data processed by DH.

Comments on denominator data - For those absent households for which no completed Census form was received by ONS, certain data were imputed.

Statistical methods:

Census data for PCOs were produced by ONS on the basis of best fit using two different methods. The 2001 Census Key Statistics tables were produced on the basis of best fit of Output Areas to PCOs, and Standard tables (which are generally the more detailed tables, showing cross-tabulations between different variables) for health areas were produced on the basis of best fit of wards. The "two-method approach" used by ONS is a problem, in that the same variables for health areas appear as different totals in the Key Statistics and Standard tables. Some of these differences are also "significant". For a more detailed explanation see: http://www.statistics.gov.uk/census2001/cn_96.asp

Disclosure protection measures applied by the ONS to 2001 Census output for England and Wales are in place in order to prevent the inadvertent release of information about identifiable individuals. As a result, totals may sometimes not add up. For more details about disclosure control methods see: http://www.statistics.gov.uk/census2001/op5.asp

Percentages were obtained by dividing numbers of residents in each of the three groups by the corresponding total number of residents in the area.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. *The Census 2001 homepage*. Office for National Statistics, 2004. Available at: http://www.statistics.gov.uk/census2001/

Updated: December 2009

Provision of unpaid care

Purpose:

To provide 2001 Census based information about unpaid care.

Definition of indicator and its variants:

Household residents providing various levels of unpaid care.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number and percent of residents in households	P	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2001		01U_502VS_01_V2

Note: Data for PCOs have been produced from "best fit" of Output Areas.

Numerator:

Numerator data - Number of residents providing unpaid care, by level of care:

- no care;
- 1 to 19 hours;
- 20 to 49 hours;
- 50 + hours.

Source of numerator data – Office for National Statistics (ONS): Standard Table 25 (S25). Data processed by the Department of Health (DH).

Comments on numerator data - The ONS Area Classification values for Census indicators are computed from Local Authority (LA) data. Strategic Health Authority (SHA) values are computed from Primary Care Organisation (PCO) data rather than LA.

Numbers of persons providing care are based on the replies to the following question "Do you look after, or give any help or support to family members, friends, neighbours or others because of: long-term physical or mental ill-health or disability, or problems related to old age? (Do not count anything you do as part of your paid employment. Tick time spent in a typical week)".

Denominator:

Denominator data - The total number of residents in the area.

Source of denominator data - ONS: Standard Table 25 (S25). Data processed by DH.

Comments on denominator data - For those absent households for which no completed Census form was received by ONS, certain data were imputed.

Statistical methods:

Census data for PCOs were produced by ONS on the basis of best fit using two different methods. The 2001 Census Key Statistics tables were produced on the basis of best fit of Output Areas to PCOs, and Standard tables (which are generally the more detailed tables, showing cross-tabulations between different variables) for health areas were produced on the basis of best fit of wards. The "two-method approach" used by ONS is a problem, in that the same variables for health areas appear as different totals in the Key Statistics and Standard tables. Some of these differences are also "significant". For a more detailed explanation see: http://www.statistics.gov.uk/census2001/cn_96.asp

Disclosure protection measures applied by the ONS to 2001 Census output for England and Wales are in place in order to prevent the inadvertent release of information about identifiable individuals. As a result, totals may sometimes not add up. For more details about disclosure control methods see: http://www.statistics.gov.uk/census2001/op5.asp

Percentages were obtained by dividing the number of residents providing each of the "level of care groups" by the corresponding total number of residents in the area.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. *The Census 2001 homepage*. Office for National Statistics, 2004. Available at: http://www.statistics.gov.uk/census2001/

Updated: December 2009

Health of providers of unpaid care

Purpose:

To provide 2001 Census based information about resident populations' general health by the amount of care that they provide.

Definition of indicator and its variants:

General health of providers of unpaid care.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number and percent	P	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2001		01V_504VS_01_V2

Note: Data for PCOs have been produced from "best fit" of Output Areas.

Numerator:

Numerator data - Number of residents providing care by their state of health.

Source of numerator data - Office for National Statistics (ONS): Standard Table 25 (S25). Data processed by the Department of Health (DH).

Comments on numerator data - The ONS Area Classification values for Census indicators are computed from Local Authority (LA) data. Strategic Health Authority (SHA) values are computed from Primary Care Organisation (PCO) data rather than LA.

Person's health is based on replies to the question "Over the last twelve months would you say your health has on the whole been: Good, Fairly good or Not good?"

Numbers of persons providing care are based on the replies to the following question:

 "Do you look after, or give any help or support to family members, friends, neighbours or others because of: long-term physical or mental ill-health or disability, or problems related to old age?"

This excludes anything done as part of paid employment. This response is recorded as time spent in a typical week as follows:

- no care;
- 1 to 19 hours;
- 20 to 49 hours;
- 50 + hours.

Denominator:

Denominator data - The total number of carers in the area.

Source of denominator data - ONS: Standard Table 25 (S25). Data processed by DH.

Comments on denominator data - For those absent households for which no completed Census form was received by ONS, certain data were imputed.

Statistical methods:

Census data for PCOs were produced by ONS on the basis of best fit using two different methods. The 2001 Census Key Statistics tables were produced on the basis of best fit of Output Areas to PCOs, and Standard tables (which are generally the more detailed tables, showing cross-tabulations between different variables) for health areas were produced on the basis of best fit of wards. The "two-method approach" used by ONS is a problem, in that the same variables for health areas appear as different totals in the Key Statistics and Standard tables. Some of these differences are also "significant". For a more detailed explanation see: http://www.statistics.gov.uk/census2001/cn_96.asp

Disclosure protection measures applied by the ONS to 2001 Census output for England and Wales are in place in order to prevent the inadvertent release of information about identifiable individuals. As a result, totals may sometimes not add up. For more details about disclosure control methods see: http://www.statistics.gov.uk/census2001/op5.asp

Percentages were obtained by dividing numbers of each level of person's health and amount of care they provide by total number of household residents of good health, fairly good health or not good health as appropriate.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. *The Census 2001 homepage*. Office for National Statistics, 2004. Available at: http://www.statistics.gov.uk/census2001/

Updated: December 2009

Religion

Purpose:

To provide 2001 Census based information about resident populations' religions.

Definition of indicator and its variants:

Resident populations by type of religion.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number and percent of all residents	P	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2001		01W_503VS_01_V2

Note: Data for PCOs have been produced from "best fit" of Output Areas.

Numerator:

Numerator data - Number of residents by type of religion.

Source of numerator data – Office for National Statistics (ONS): Standard Table 149 (S149). Data processed by the Department of Health (DH).

Comments on numerator data - The ONS Area Classification values for Census indicators are computed from Local Authority (LA) data. Strategic Health Authority (SHA) values are computed from Primary Care Organisation (PCO) data rather than LA.

This was the only voluntary question in the Census. Numbers of persons by religion is based on replies to the question "What is your religion" where the following boxed replies were allowed: "None", "Christian", "Buddhist", "Hindu", "Jewish", "Muslim", "Sikh", and "Any other religion".

Denominator:

Denominator data - The total number of residents in the area excluding those where religion was not stated.

Source of denominator data - ONS: Standard Table 149 (S149). Data processed by DH.

Comments on denominator data - For those absent households for which no completed Census form was received by ONS, certain data were imputed.

Statistical methods:

Census data for PCOs were produced by ONS on the basis of best fit using two different methods. The 2001 Census Key Statistics tables were produced on the basis of best fit of Output Areas to PCOs, and Standard tables (which are generally the more detailed tables, showing cross-tabulations between different variables) for health areas were produced on the basis of best fit of wards. The "two-method approach" used by ONS is a problem, in that the same variables for health areas appear as different totals in the Key Statistics and Standard tables. Some of these differences are also "significant". For a more detailed explanation see:
http://www.statistics.gov.uk/census2001/cn_96.asp

Disclosure protection measures applied by the ONS to 2001 Census output for England and Wales are in place in order to prevent the inadvertent release of information about identifiable individuals. As a result, totals may sometimes not add up. For more details about disclosure control methods see:
http://www.statistics.gov.uk/census2001/op5.asp

Percentages were obtained by dividing number of residents of each religion by the corresponding total number of residents in the area.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1.   Office for National Statistics. *The Census 2001 homepage*. Office for National Statistics, 2004. Available at: http://www.statistics.gov.uk/census2001/

Updated: December 2009

Fat consumption

Purpose:

To reduce the proportion of food energy derived from saturated fatty acids and total fat.

Definition of indicator and its variants:

The proportion of food energy derived from household food and drink excluding alcohol.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Percent of household food energy derived from saturated fatty acids	P	All ages	E, GOR	2007-09	FY 1996/97-1998/99 to 2006-08	02A_051PCP1_09_V1
Percent of household food energy derived from saturated fatty acids	P	All ages	E, GOR	2009	FY 2001/02 to 2008	02A_051PCP2_09_V1
Percent of household food energy derived from total fat	P	All ages	E, GOR	2007-09	FY 1996/97-1998/99 to 2006-08	02A_051PCP3_09_V1
Percent of household food energy derived from total fat	P	All ages	E, GOR	2009	FY 2001/02 to 2008	02A_051PCP4_09_V1

Numerator:

Numerator data - Estimates of energy derived from saturated fatty acids and total fat by households in a sample survey of randomly selected private households in the United Kingdom.

Source of numerator data - Expenditure and Food Survey.

Comments on numerator data - The Expenditure and Food Survey (EFS) replaced the National Food Survey (NFS) and the Family Expenditure Survey (FES) from 1 April 2001. The EFS is a continuous survey of households in the United Kingdom comissioned jointly by the Office for National Statistics (ONS) and the Department for Environment, Food and Rural Affairs (DEFRA).

Estimates from the EFS are more accurate than those from the original NFS data due to design improvements. These include the use of till receipts and the use of individual two-week diaries for each member of the participating household aged 7 years and over. As a result of the improved recording methods, the EFS shows higher amounts of expenditure, consumption, and nutrient intakes overall.

The EFS was run on a financial year basis until 2005/06, unlike NFS, which produced results by calendar year. Although the EFS results should not be compared directly with the NFS results, a methodology has been developed to provide scaling factors for adjusting NFS results at household level. Despite discontinuities between the two surveys that make construction of a longer term time series very difficult, NFS results from 1996 have been scaled up for comparison with the EFS and the data show the series on a financial year basis back to 1996/97. However, any comparisons with the discontinued NFS should be treated with caution.

For the 2006 results the survey has moved onto a calendar year basis (from the previous financial year basis) in preparation for its integration to the Continuous Population Survey (CPS) from January 2008. As a consequence, the January 2006 to March 2006 data are common between the 2005/06 financial year results and the 2006 calendar year results. The duplication of January - March 2006 when the survey switched from financial year to calendar year has been removed from calculation.

Denominator:

Denominator data - A sample of randomly selected private households in the United Kingdom.

Source of denominator data - Expenditure and Food Survey.

Comments on denominator data - The EFS survey is based on a sample of randomly selected target households in the United Kingdom. For the background information and detailed description of the survey see: http://www.statistics.gov.uk/ssd/surveys/expenditure_food_survey.asp

Statistical methods:

Data presented here are rolling three-year weighted averages of the percentages. The three-year weighted averages are derived by weighting the estimates for each year by the sample size. For more details see the methodological note available at: http://archive.defra.gov.uk/evidence/statistics/foodfarm/food/familyfood/method/index.htm

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

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2. A National Statistics Publication by DEFRA. *Family Food in 2008*. London: TSO, 2009. Available at: http://archive.defra.gov.uk/evidence/statistics/foodfarm/food/familyfood/documents/familyfood-2008.pdf
3. A National Statistics Publication by DEFRA. *Family Food in 2007*. London: TSO, 2008. Available at: http://archive.defra.gov.uk/evidence/statistics/foodfarm/food/familyfood/documents/familyfood-2007.pdf
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Updated: June 2011

Body Mass Index

Purpose:

To help reduce the prevalence of obesity.

Definition of indicator and its variants:

Observed body mass index (BMI) of adults.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Mean and age-standardised mean	MFP	16+	E, GOR, ONS area, SHA, CTY	2001-03 2002-04 2003-05 2004-06 2005-07 2006-08	1998-08	02D_310VSP1_08_V1 02D_310VSP2_08_V1

Numerator:

Numerator data - The BMI calculated for persons aged 16+ in a sample survey of the health of the population of England.

Source of numerator data - Health Survey for England (HSE), commissioned by the Department of Health and since April 2005 The Information Centre for health and social care and carried out by the Joint Health Survey Unit of Social and Community Planning Research and of the Department of Epidemiology and Public Health at University College, London.

Comments on numerator data - Body mass index is defined as weight in kg divided by the square height in metres. Adults (aged 16 and over) can be classified into the following BMI groups:

- Underweight - less than 18.5 kg/m^2
- Normal - 18.5 to less than 25 kg/m^2;
- Overweight - over 25 to less than 30 kg/m^2;
- Obese - over 30 kg/m^2;
- 'Morbid obesity' – 40 kg/m^2 or more.

BMI was calculated for all respondents who had valid height and weight measurements. The height of respondents who were chair-bound, unsteady, or could not stand straight was not measured. Data for those who were considered by the interviewer to have unreliable measurements (e.g. wearing a wig, turban) were excluded from the analysis. The weight of respondents who were pregnant, chair bound, unsteady, or could not stand was not measured. Those who weighed more than 130 kg were asked for an "estimated weight" because the scales were unreliable above this level. These have been included in the analysis.

Denominator:

Denominator data - Respondents (with measurements) aged 16+ in a sample survey of the health of the population of England.

Source of denominator data - See "Numerator data".

Comments on denominator data - The HSE is a series of annual surveys that began in 1991 with the aim of monitoring the health of the population. It was designed to measure health and health related behaviours in adults and children living in private households in England. For each participant, the survey included an interview and a physical examination by a nurse, at which various physical measurements, tests, and samples of blood and saliva were collected. These measurements provided biomedical information about known risk factors associated with disease and objective validation for self-reported health behaviour.

Statistical methods:

The figures have been provided for three-year periods (based on three-year moving averages) and for calendar years. All calculations of sub-national observed estimates at Government Office Region, ONS area, Strategic Health Authority and County levels, age-standardised rates, confidence intervals and significance tests were carried out by the National Centre for Social Research (see Annex 9 for details).

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Craig R and Mindell (eds). *Health Survey for England 2006. Volume 1: Cardiovascular disease and risk factors in adults*. The Information Centre, Leeds, 2008. Available at:
   http://www.ic.nhs.uk/webfiles/publications/HSE06/HSE%2006%20report%20VOL%201%20v2.pdf
2. Craig R and Mindell (eds). *Health Survey for England 2006. Volume 3: Methodology and documentation*. The Information Centre, Leeds, 2008. Available at:
   http://www.ic.nhs.uk/webfiles/publications/HSE06/HSE06_VOL3.pdf
3. Scholes S, Prescott A and Bajekal M. *Health and lifestyle indicators for Strategic Health Authorities, 1994-2002*, London: National Centre for Social Research, 2004. Available at:
   http://www.dh.gov.uk/assetRoot/04/07/77/31/04077731.pdf
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Updated: November 2010

Adults who are overweight

Purpose:

To help reduce the prevalence of obesity.

Definition of indicator and its variants:

Proportion of adults with a Body Mass Index (BMI) greater than 25 and under 30 kg/m^2.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number, percent and age-standardised percent	MFP	16+	E, GOR, ONS area, SHA, CTY	2001-03 2002-04 2003-05 2004-06 2005-07 2006-08	1998-08	02E_311VSP1_08_V1 02E_311VSP2_08_V1

Numerator:

Numerator data - The number of persons aged 16+ who are overweight in a sample survey of the health of the population of England. Overweight people are defined as having a BMI of 25 to 30.

Source of numerator data - Health Survey for England (HSE), commissioned by the Department of Health and since April 2005 The Information Centre for health and social care and carried out by the Joint Health Survey Unit of Social and Community Planning Research and of the Department of Epidemiology and Public Health at University College, London (See "Further reading").

Comments on numerator data - Overweight, defined by body mass index (weight in kilograms divided by height in metres squared), was calculated for all respondents who had valid height and weight measurements (see "Comments on numerator data" section of BMI indicator for definition of valid height and weight measurements).

Denominator:

Denominator data - Respondents (with measurements) aged 16+ in a sample survey of the health of the population of England.

Source of denominator data - See "Numerator data".

Comments on denominator data - The HSE is a series of annual surveys that began in 1991 with the aim of monitoring the health of the population. It was designed to measure health and health related behaviours in adults and children living in private households in England. For each participant, the survey included an interview and a physical examination by a nurse, at which various physical measurements, tests, and samples of blood and saliva were collected. These measurements provided biomedical information about known risk factors associated with disease and objective validation for self-reported health behaviour.

Statistical methods:

The figures have been provided for three-year periods (based on three-year moving averages) and for calendar years. All calculations of sub-national observed estimates at Government Office Region, ONS area, Strategic Health Authority and County levels, age-standardised rates, confidence intervals and significance tests were carried out by the National Centre for Social Research (see Annex 9 for details).

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Craig R and Mindell (eds). *Health Survey for England 2006. Volume 1: Cardiovascular disease and risk factors in adults*. The Information Centre, Leeds, 2008. Available at: http://www.ic.nhs.uk/webfiles/publications/HSE06/HSE%2006%20report%20VOL%201%20v2.pdf

2.   Craig R and Mindell (eds). *Health Survey for England 2006. Volume 3: Methodology and documentation*. The Information Centre, Leeds, 2008. Available at: http://www.ic.nhs.uk/webfiles/publications/HSE06/HSE06_VOL3.pdf

3.   Scholes S, Prescott A and Bajekal M. *Health and lifestyle indicators for Strategic Health Authorities, 1994-2002*, London: National Centre for Social Research, 2004. Available at: http://www.dh.gov.uk/assetRoot/04/07/77/31/04077731.pdf

4.   Department of Health. *The Health Survey for England 1998 - Cardiovascular Disease*. London: Her Majesty's Stationery Office, 1998.

Updated: November 2010

Obesity

Purpose:

To help reduce the prevalence of obesity.

Definition of indicator and its variants:

Observed and age-standardised proportion of adults with a Body Mass Index (BMI) greater than 30 kg/m^2.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number, percent and age-standardised percent	MFP	16+	E, GOR, ONS area, SHA, CTY	2001-03 2002-04 2003-05 2004-06 2005-07 2006-08	1998-08	02F_312VSP1_08_V1 02F_312VSP2_08_V1

Numerator:

Numerator data - The number of persons aged 16+ who are obese in a sample survey of the health of the population of England.

Source of numerator data - Health Survey for England (HSE), commissioned by the Department of Health and since April 2005 The Information Centre for health and social care and carried out by the Joint Health Survey Unit of Social and Community Planning Research and of the Department of Epidemiology and Public Health at University College, London.

Comments on numerator data - Obesity, defined by Body Mass Index (weight in kilograms divided by height in metres squared), was calculated for all respondents who had valid height and weight measurements (see "Comments on numerator data" section of BMI indicator for definition of valid height and weight measurements).

Denominator:

Denominator data - Respondents aged 16+ with measurements in a sample survey of the health of the population of England.

Source of denominator data - See "Numerator data".

Comments on denominator data - The HSE is a series of annual surveys that began in 1991 with the aim of monitoring the health of the population. It was designed to measure health and health related behaviours in adults and children living in private households in England. For each participant, the survey included an interview and a physical examination by a nurse, at which various physical measurements, tests, and samples of blood and saliva were collected. These measurements provided biomedical information about known risk factors associated with disease and objective validation for self-reported health behaviour.

Statistical methods:

The figures have been provided for three-year periods (based on three-year moving averages) and for calendar years. All calculations of sub-national observed estimates at Government Office Region, ONS area, Strategic Health Authority and County levels, age-standardised rates, confidence intervals and significance tests were carried out by the National Centre for Social Research (see Annex 9 for details).

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Craig R and Mindell (eds). *Health Survey for England 2006. Volume 1: Cardiovascular disease and risk factors in adults*. The Information Centre, Leeds, 2008. Available at: http://www.ic.nhs.uk/webfiles/publications/HSE06/HSE%2006%20report%20VOL%201%20v2.pdf

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Updated: November 2010

Cigarette smoking

Purpose:

To help reduce the prevalence of smoking.

Definition of indicator and its variants:

The prevalence of smoking:
(i)   Proportion of current cigarette smokers based on the results from General Lifestyle Survey;
(ii)   Proportion of self-reported current cigarette smokers based on results from the Health Survey for England.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Percent (i)	MFP	16+	E, GOR	2009	1998, 2000 to 2008	02G_314PC_09_V1
Number, percent and age-standardised percent (ii)	MFP	16+	E, GOR, ONS area, SHA, CTY	2001-03 2002-04 2003-05 2004-06 2005-07 2006-08	1998-08	02G_314VSP1_08_V1 02G_314VSP2_08_V1

Numerator:

Numerator data –
(i)   Current smokers aged 16+ in a sample survey of the general population resident in private households in Britain;
(ii)   Current smokers aged 16+ in a sample survey of the health of the population of England.

Source of numerator data -
(i)   General Lifestyle Survey (GLF) formerly known as the General Household Survey (GHS) - a multi-purpose continuous survey carried out by the Office for National Statistics (ONS) as part of the Integrated Household Survey (IHS).
(ii) Health Survey for England (HSE), commissioned by the Department of Health and since April 2005 The Information Centre for health and social care and carried out by the Joint Health Survey Unit of Social and Community Planning Research and of the Department of Epidemiology and Public Health at University College, London.

Comments on numerator data -
(i)   GLF data on smoking are now provided on an annual basis;
(ii)   HSE numerator data are based on observed self-reported current smoking.

Denominator:

Denominator data -
(i)   A sample of the general population aged 16+ resident in private households in Britain;
(ii)   Respondents aged 16+ in a sample survey of the health of the population of England.

Source of denominator data - See "Numerator data".

Comments on denominator data –
(i)   The GLF collects information on a range of core topics including smoking and drinking from people living in private households in Great Britain. The survey started as the GHS in 1971 and has been carried out continuously since then, except for breaks in 1997-1998 (when the survey was reviewed) and 1999-2000 (when the survey was re-developed). For more details about the GLF see:
http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=5756&More=Y
(ii)   The HSE is a series of annual surveys that began in 1991 with the aim of monitoring the health of the population. It was designed to measure health and health related behaviours in adults and children living in private households in England. For each participant, the survey included an interview and a physical examination by a nurse, at which various physical measurements, tests, and samples of blood and saliva were collected. These measurements provided biomedical information about known risk factors associated with disease and objective validation for self-reported health behaviour.

Statistical methods:

(i)   The GLF figures presented are the percentage of survey respondents aged 16+ who are current smokers.

(ii)   The figures have been provided for three-year periods (based on three-year moving averages) and for calendar years. All calculations of sub-national observed estimates at Government Office Region, ONS area, Strategic Health Authority and County levels, age-standardised rates, confidence intervals and significance tests were carried out by the National Centre for Social Research (see Annex 9 for details).

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

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2. Dunstan S. *General Lifestyle Survey Overview,*. A Report on the 2009 General Lifestyle Survey, Newport: Office for National Statistics, 2011. Available at: http://www.statistics.gov.uk/downloads/theme_compendia/GLF09/GLFoverview2009.pdf

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4. Ali R, Bugler C, Curtis D, Dunstan S, Lloyd K, Maurice S, Pobjoy A, Shemwell L and White J. *General Household Survey 2008: Overview Report*, Newport Office for National Statistics, 2010. Available at: http://www.statistics.gov.uk/downloads/theme_compendia/GLF08/GLFoverview2008.pdf

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10. Craig R and Mindell (eds). *Health Survey for England 2006. Volume 3: Methodology and documentation*. The Information Centre, Leeds, 2008. Available at: http://www.ic.nhs.uk/webfiles/publications/HSE06/HSE06_VOL3.pdf

11. Goddard E. *General Household Survey 2005: Smoking and drinking among adults*. London: Office for National Statistics, 2006. Available at: http://www.statistics.gov.uk/downloads/theme_compendia/GHS05/GHS2005_SmokingandDrinking_Report.pdf

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15. Department of Health. *NHS Cancer Plan: a plan for investment, a plan for reform.* London: Department of Health. 2000. Available online at: http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPolicyAndGuidanceArticle/fs/en?CONTENT_ID=4009609&chk=n4LXTU

16. Department of Health. *Smoking Kills: a White Paper on Tobacco.* London: Her Majesty's Stationery Office, 1998. Available at: http://www.archive.official-documents.co.uk/document/cm41/4177/4177.htm

17. Scholes S, Prescott A and Bajekal M. *Health and lifestyle indicators for Strategic Health Authorities, 1994-2002*, London: National Centre for Social Research, 2004.

18. Joint Health Surveys Unit, National Centre for Social Research and Department of Epidemiology and Public Health, the Royal Free and University College Medical School, London. *The Health Survey for England - Cardiovascular disease*. London: Her Majesty's Stationery Office, 1998.

Updated: June 2011

Cotinine level

Purpose:

To reduce prevalence of smoking.

Definition of indicator and its variants:

Proportion of adults with a serum / salivary cotinine level of 15 or more nanograms per millilitre (a level regarded as indicative of smoking).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number, percent and age-standardised percent	MFP	16+	E, GOR, ONS area, SHA, CTY	2000-02		02I_315VSP1_02_V2
					2001 2007-08	02I_315VSP2_08_V1

Numerator:

Numerator data - Persons aged 16+ with a serum cotinine level of 15ng/ml or above in a sample survey of the health of the population of England.

Source of numerator data - Health Survey for England (HSE), commissioned by the Department of Health and since April 2005 The Information Centre for health and social care and carried out by the Joint Health Survey Unit of Social and Community Planning Research and of the Department of Epidemiology and Public Health at University College, London.

Comments on numerator data - Blood samples taken from adult Health Survey respondents were analysed to estimate cotinine levels in serum. Levels of 15 nanograms per millilitre or higher suggest strongly that the respondent is an active smoker (please note that the cutoff point has been reduced from 20 to 15 nanograms per millilitre and therefore current figures are not comparable with previously published data for this indicator). Persons using nicotine replacement products were excluded from the analysis.

Cotinine is a metabolite of nicotine. It is one of several biological markers that are indicators of smoking (others include carbon monoxide and thiocyanate), and is generally considered the most useful. It can be measured in, among other things, saliva or serum (before 1998, cotinine levels in the Health Survey were measured in serum in adults, but from 1998 were measured in saliva, primarily to increase the number of people being measured as more people refuse to give a blood sample than a saliva sample). Cotinine has a half-life in the body of between 16 and 20 hours, which means that it will detect regular smoking (or other tabaco use such as chewing) but may not detect occasional use if the last occasion was several days ago. Anyone with a salivary cotinine level of 15 nanograms per millitre or more is highly likely to be a tobacco user.

The measurement of cotinine levels in the Health Survey series provides an objective cross-check on self-reports of smoking behaviour, which are known not always to be accurate. Inaccuracies in reporting arise in part from difficulties respondents may experience in providing quantitative summaries of variable behaviour patterns, but in some cases arise from a desire to conceal the truth from other people, such as household members who may be present during the interview. Limitations on the ability of self-report to provide accurate quantitative responses are particularly marked in relation to exposure to other people's smoking (passive smoking). Assays of cotinine levels by gas chromatography are sensitive and are able to detect and measure low concentrations of cotinine. They are thus of particular value in examining passive smoking.

Denominator:

Denominator data - Respondents (with measurements) aged 16+ in a sample survey of the health of the population of England.

Source of denominator data - See "Numerator data".

Comments on denominator data - The HSE is a series of annual surveys that began in 1991 with the aim of monitoring the health of the population. It was designed to measure health and health related behaviours in adults and children living in private households in England. For each participant, the survey included an interview and a physical examination by a nurse, at which various physical measurements, tests, and samples of blood and saliva were collected. These measurements provided biomedical information about known risk factors associated with disease and objective validation for self-reported health behaviour.

Statistical methods:

The figures have been provided for three-year periods (based on three-year moving averages) and for calendar years. All calculations of sub-national observed estimates at Government Office Region, ONS area, Strategic Health Authority and County levels, age-standardised rates, confidence intervals and significance tests were carried out by the National Centre for Social Research (see Annex 9 for details).

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Scholes S, Prescott A and Bajekal M. *Health and lifestyle indicators for Strategic Health Authorities, 1994-2002*, London: National Centre for Social Research, 2004. Available at: http://www.dh.gov.uk/assetRoot/04/07/77/31/04077731.pdf
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Updated: November 2010

Alcohol consumption

Purpose:

To help reduce the prevalence of excessive alcohol consumption and the health risks associated with single episodes of intoxication.

The damage caused by alcohol misuse to individuals and society has become an increasing focus of public concern in recent years. Drinking alcohol has been linked to increased risks of hypertension, stroke, coronary heart disease, liver cirrhosis and some cancers.

Definition of indicator and its variants:

The prevalence of alcohol consumption above certain specified levels ("sensible" limits) based on people's estimates of amounts drank on a "usual" occasion recorded in terms of five different types of drink and then converted into units of alcohol:

(i) The prevalence of alcohol consumption based on results from the General Lifestyle Survey including:
- Proportion of men who drank more than 4 units of alcohol on at least one day the previous week and women who drank more than 3 units;
- Proportion of men who drank more than 8 units of alcohol on at least one day the previous week and women who drank more than 6 units.

(ii) The prevalence of alcohol consumption based on results from the Health Survey for England including:
- Proportion of men drinking more than 4 units and women drinking more than 3 units of alcohol in heaviest drinking day last week;
- Proportion of men drinking more than 8 units and women drinking more than 6 units of alcohol in heaviest drinking day last week.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Percent (i)	MF	16+	E, GOR	2009	1998, 2000 to 2008	02K_318PC_09_V1
Number, percent and age-standardised percent (ii)	MFP	16+	E, GOR, ONS area, SHA, CTY	2001-03 2002-04 2003-05 2004-06	1998-08	02K_318VSP1_06_V1 02K_318VSP2_06_V1 02K_318VSP3_08_V1 02K_318VSP4_08_V1

Numerator:

Numerator data -
(i)   The number of men who drank more than 4 and 8 units and women who drank 3 and 6 units on at least one day in a sample survey of the general population resident in private households in Britain.
(ii)   The number of men and women aged 16+ drinking more than 4 or 8 units and 3 or 6 units respectively in heaviest drinking day last week in a sample survey of the health of the population of England.

Source of numerator data -
(i)   General Lifestyle Survey (GLF) formerly known as the General Household Survey (GHS) - a multi-purpose continuous survey carried out by the Office for National Statistics (ONS) as part of the Integrated Household Survey (HIS).
(ii)   Health Survey for England (HSE), commissioned by the Department of Health and since April 2005 The Information Centre for health and social care and carried out by the Joint Health Survey Unit of Social and Community Planning Research and of the Department of Epidemiology and Public Health at University College, London.

Comments on numerator data -
(i)   GLF data on alcohol consumption are now provided on an annual basis. Prior to 1988, alcohol questions were asked only of those aged 18 and over, but since 1988, respondents aged 16 and 17 have answered the questions using a self-completion questionnaire. Obtaining reliable information about drinking behaviour is difficult and, in consequence, social surveys consistently record lower levels of consumption than would be expected from data on alcohol sales. This is partly because people may consciously or unconsciously under-estimate how much alcohol they consume. Drinking at home is particularly likely to be under-estimated because the quantities consumed are not measured and are likely to be larger than those dispensed in licensed premises.

The current measure of average weekly alcohol consumption has been used in the GHS since 1986, and was developed in response to earlier medical guidelines on drinking which related to maximum recommended weekly amounts of alcohol. Its use has been continued to provide a consistent measure of alcohol consumption by means of which trends can continue to be monitored. Respondents are asked how often over the last year they have drank each of the six types of drink listed in the previous section (normal strength beer, strong beer, wine, spirits, fortified wines and alcopops), and how much they have usually drank on any one day. This information is combined to give an estimate of the respondent's weekly alcohol consumption (averaged over a year) in units of alcohol.

(ii)   HSE numerator data are broadly based on observed self-reported binge drinking behaviour. The binge drinking indicator definition has changed and is now consistent with the definition used on the GHS. Also in 2007 the method of calculating units was changed. See the HSE 2007 report, Volume 1 Chapter 7 for details: http://www.ic.nhs.uk/pubs/hse07healthylifestyles.

From 1998 onwards, in addition to questions on "usual" consumption, adults were asked about how many days had they drank alcohol in the past 7 days. If they had drank more on one day than others, they were asked how much they drank on that day. If they had drank the same amount on several days, they were asked how much they had drank on the most recent of those days. The thresholds of 4 or more units for men and 3 or more units for women were based on the daily sensible alcohol consumption advice.

The HSE no longer collects data on the amount of weekly consumption therefore the indicators referring to mean usual alcohol consumption per week and proportion of men and women drinking more than 21 and 14 units respectively per week cannot be updated.

Denominator:

Denominator data -
(i)   A sample of the general population aged 16+ resident in private households in Britain.
(ii)   Respondents aged 16+ in a sample survey of the health of the population of England. The base for mean weekly alcohol consumption is all adults in the survey.

Source of denominator data - See "Numerator data".

Comments on denominator data -
(i)   The GLF collects information on a range of core topics including smoking and drinking from people living in private households in Great Britain. The survey started as the GHS in 1971 and has been carried out continuously since then, except for breaks in 1997-1998 (when the survey was reviewed) and 1999-2000 (when the survey was re-developed). For more details about the GLF see: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=5756&More=Y
(ii)   The HSE is a series of annual surveys that began in 1991 with the aim of monitoring the health of the population. It was designed to measure health and health related behaviours in adults and children living in private households in England. For each participant, the survey included an interview and a physical examination by a nurse, at which various physical measurements, tests, and samples of blood and saliva were collected. These measurements provided biomedical information about known risk factors associated with disease and objective validation for self-reported health behaviour.

Statistical methods:

(i)   GLF used two measures of alcohol consumption on at least one day in recent week : 4 and 8 units (men) and 3 and 6 units (women). The figures presented are the percentage of survey respondents aged 16+ who reported alcohol consumption above certain specified levels.
(ii)   The figures have been provided for three-year periods (based on three-year moving averages) and for calendar years. All calculations of sub-national observed estimates at Government Office Region, ONS area, Strategic Health Authority and County levels, age-standardised rates, confidence intervals and significance tests were carried out by the National Centre for Social Research (see Annex 9 for details).

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1.   *Manual workers smoke more but drink less than professionals*. News Release: Smoking and drinking among adults. Office for National Statistics, January 2011. Available at: http://www.statistics.gov.uk/pdfdir/ghs0111.pdf
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Updated: June 2011

Fruit and vegetable consumption

Purpose:

To help reduce the risk of deaths from chronic diseases such as heart disease, stroke, and cancer.

The Five-a-day programme was introduced to increase fruit and vegetable consumption within the general population. Its central message is that people should eat at least five portions of fruit and vegetables a day; that a variety of fruit and vegetables should be consumed and that fresh, frozen, canned and dried fruit, vegetables and pulses all count in making up these portions. The programme includes educational initiatives to increase awareness of the Five-a-day message and the benefits of fruit and vegetable consumption, along with more direct schemes to increase access to fruit and vegetables, such as the school fruit scheme and community initiatives. Monitoring of fruit and vegetable consumption is key to evaluating the success of the policy, both at the level of individual schemes and at a more general level.

Definition of indicator and its variants:

Observed and age-standardised proportion of adults who met the recommended guidelines of consuming five or more portions of fruit and vegetables a day.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number, percent and age-standardised percent	MFP	16+	E, GOR, ONS area, SHA, CTY	2001-03 2002-04 2003-05 2004-06 2005-07 2006-08	2001-08	02L_319VSP1_08_V1 02L_319VSP2_08_V1

Numerator:

Numerator data - The number of persons aged 16+ who consume five or more portions of fruit and vegetables a day in a sample survey of the health of the population of England.

Source of numerator data - Health Survey for England (HSE), commissioned by the Department of Health and since April 2005 The Information Centre for health and social care and carried out by the Joint Health Survey Unit of Social and Community Planning Research and of the Department of Epidemiology and Public Health at University College, London.

Comments on numerator data - The Government recommends an intake of at least five portions of fruit or vegetables (five 80g portions or 400g) per person per day to help reduce the risk of some cancers, heart disease and many other chronic conditions. Questions about fruit and vegetable consumption were designed to assess levels of fruit and vegetable consumption within the population and to compare it with the Five-a-day message.

Denominator:

Denominator data - Respondents aged 16+ in a sample survey of the health of the population of England.

Source of denominator data - See "Numerator data".

Comments on denominator data - The HSE is a series of annual surveys that began in 1991 with the aim of monitoring the health of the population. It was designed to measure health and health related behaviours in adults and children living in private households in England. For each participant, the survey included an interview and a physical examination by a nurse, at which various physical measurements, tests, and samples of blood and saliva were collected. These measurements provided biomedical information about known risk factors associated with disease and objective validation for self-reported health behaviour.

Statistical methods:

The figures have been provided for three-year periods (based on three-year moving averages) and for calendar years. All calculations of sub-national observed estimates at Government Office Region, ONS area, Strategic Health Authority and County levels, age-standardised rates, confidence intervals and significance tests were carried out by the National Centre for Social Research (see Annex 9 for details).

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Craig R and Mindell (eds). *Health Survey for England 2006. Volume 1: Cardiovascular disease and risk factors in adults*. The Information Centre, Leeds, 2008. Available at:
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   http://www.dh.gov.uk/en/Publichealth/Healthimprovement/FiveADay/FiveADaygeneralinformation/DH_400234
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Updated: November 2010

Obesity among GP patients

Purpose:

To help reduce the prevalence of obesity among NHS patients.

Obesity has become a major health issue. It is associated with poor clinical outcomes and is also a major contributory factor for some of the commonest causes of death and disability in developed economies, most notably greater rates of diabetes mellitus and accelerated onset of cardiovascular disease.

Definition of indicator and its variants:

Proportion of patients with a BMI (body mass index) greater than or equal to 30 in a GP registered population.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	16+	E, GOR, SHA, PCO	FY 2009/10		02M_670PC_10_V1

Numerator:

Numerator data - Patients aged 16 and over registered with GP practices who are obese with a BMI at least 30 in the previous 15 months.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

Denominator:

Denominator data - All patients aged 16 and over registered with GP practices (estimated age-banded practice list size).

Source of denominator data - See "Numerator data".

Comments on denominator data - Age-banded practice list sizes were obtained from the Prescription Services Division (RxS) of the NHS Business Services Authority.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

From 2009 onwards, National Prevalence Day has been moved to 31st March (previously 14th February), so that prevalence is calculated on the same basis as disease registers for indicator denominators.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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9. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf

Updated: June 2011

Smoking among patients with selected conditions

Purpose:

To help reduce the level of risk to health associated with smoking for NHS patients with selected conditions.

Smoking is an established risk factor for cardiovascular and other diseases.

Definition of indicator and its variants:

Proportion of patients with any or any combination of the following conditions (co-morbidity): coronary heart disease, stroke or TIA, hypertension, diabetes, COPD, CKD, asthma, schizophrenia, bipolar affective disorder or other psychoses whose notes record smoking status in the previous 15 months (except those who have never smoked where smoking status need only be recorded once since diagnosis).

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	16+	E, GOR, SHA, PCO	FY 2009/10		02N_671PC_10_V1

Numerator:

Numerator data - Patients on the co-morbidity register with particular chronic conditions who are recorded with a status of 'current smoker', 'never smoked' or 'ex-smoker' in the 15 months before the reference date. 'Never smoked status' to be checked and recorded annually until the patient is aged 25 years or over. Ex-smokers are to be asked about smoking status on an annual basis until they have been a non-smoker for 3 years.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

There have been some definitional changes in 2008/09 which have affected the data for this indicator. Patients with CKD, schizophrenia, bipolar affective disorder or other psychoses have been added to the definition and the criteria have changed. For more details see 'Changes to Quality and Outcomes Framework for 2008' available at: http://www.nhsemployers.org/SiteCollectionDocuments/27_3_08_Proposed_Changes_to_Quality_and_Outcomes _Framework_for_2008__FINAL_CD_110209.pdf

Denominator:

Denominator data - All patients on the co-morbidity register with particular chronic conditions excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the three months before the reference date;
- smoking exception reported in the 15 months before the reference date;
- the earliest diagnosis date of disease recorded in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11

months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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5. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Statistics for England 2007/08*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2007-08/QOF%20200708%20Statistical%20Bulletin.pdf
6. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf
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Updated: June 2011

Smoking cessation advice for smokers with selected conditions

Purpose:

To help reduce the level of risk to health associated with smoking for NHS patients with selected conditions and ensure high standards of primary health care and treatment delivered to them.

Evidence of benefits of smoking cessation has mostly been part of research in the domain of ischaemic heart disease. Many strategies have been used to help people to stop smoking. A meta-analysis of controlled trials in patients post-myocardial infarction showed that a combination of individual and group smoking cessation advice and assistance reinforced by primary care teams gave the highest success rates.

The findings of primary prevention trials indicate that cessation of cigarette smoking shoud be advocated in the secondary prevention of ischaemic or haemorrhagic stroke. It is recommended that all patients with hypertension should have a smoking history taken. It is widely agreed that smoking cessation is the most powerful lifestyle measure to lower blood pressure or cardiovascular risk.

The risk of vascular complications in patients with diabetes is substantially increased. Because these vascular risks could be compounded by smoking, regular reminders to patients about smoking are justified. Health professionals involved in caring for diabetic patients should advise them not to smoke.

Smoking cessation is the single most effective (and cost-effective) intervention to reduce the risk of developing COPD and stop its progression. Every tobacco user should be offered at least brief tobacco dependence treatment at every visit to the health care provider.

There is epidemiological evidence that smoking is associated with poor asthma control. The evidence for the value of smoking cessation advice is largely extrapolated from studies in relation to coronary heart disease. It is recommended that smoking cessation be encouraged as it is good for general health and may decrease asthma severity.

Definition of indicator and its variants:

Proportion of patients with any or any combination of the following conditions (co-morbidity): coronary heart disease, stroke or TIA, hypertension, diabetes, COPD, CKD, asthma, schizophrenia, bipolar affective disorder or other psychoses who smoke and whose notes contain a record that smoking cessation advice or referral to a specialist service, where available, has been offered within the previous 15 months.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	16+	E, GOR, SHA, PCO	FY 2009/10		02O_672PC_10_V1

Numerator:

Numerator data - Patients on the co-morbidity register who smoke and who have been offered smoking cessation advice in the 15 months before the reference date.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

There have been some definitional changes in 2008/09 which have affected the data for this indicator. Patients with CKD, schizophrenia, bipolar affective disorder or other psychoses have been added to the definition and the criteria have changed. For more details see 'Changes to Quality and Outcomes Framework for 2008' available at:

http://www.nhsemployers.org/SiteCollectionDocuments/27_3_08_Proposed_Changes_to_Quality_and_Outcomes_Framework_for_2008__FINAL_CD_110209.pdf

Denominator:

Denominator data - All patients on the co-morbidity register whose notes record a positive smoking status excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the three months before the reference date;
- smoking exception reported in the 15 months before the reference date;
- the earliest diagnosis date of disease recorded in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the figures supplied to us are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
4. NHS Employers and General Practitioners Committee BMA. *Quality and Outcomes Framework guidance for GMS contract 2008/09*, April 2008. Available at: http://www.nhsemployers.org/SiteCollectionDocuments/QUALITY_OUT_COMPLETE_CD_110209.pdf
5. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Statistics for England 2007/08*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2007-08/QOF%20200708%20Statistical%20Bulletin.pdf
6. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07.* Available at: http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf
7. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework or England 2005/06.* Available at: http://www.ic.nhs.uk/webfiles/publications/qof/NationalQualityOutcomesFramework280906_PDF.pdf
8. The Health and Social Care Information Centre, *National Quality and Outcomes Framework Statistics for England 2004/05*. Available at: http://www.ic.nhs.uk/webfiles/publications/qof0405/QOF0405_Statistical_Bulletin.pdf
9. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68

10. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf

Updated: June 2011

Limiting long-term illness

Purpose:

To provide 2001 Census based information about resident population with limiting long-term illness.

Definition of indicator and its variants:

Proportion of residents in households with limiting long-term illness.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number, percent and indirectly age-standardised illness ratio	MF	All ages, <65, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2001		03A_009VS_01_V2

Note: Data for PCOs have been produced from "best fit" of Output Areas.

Numerator:

Numerator data - Numbers of persons in households with limiting long-term illness.

Source of numerator data – Office for National Statistics (ONS): Standard Table 16 (ST016). Data processed by the Department of Health (DH).

ONS: Small Area Statistics (SAS) - Tables 12 and 13. Data processed by DH.

Comments on numerator data - The ONS Area Classification values for Census indicators are computed from Local Authority (LA) data. Strategic Health Authority (SHA) values are computed from Primary Care Organisation (PCO) data rather than LA.

Numbers of persons in households with limiting long-term illness are based on answers to the question "Do you have any long-term illness, health problem or disability which limits your daily activities or the work you can do?"

Denominator:

Denominator data - The total persons in households in the area.

Source of denominator data - ONS: Standard Table 16 (ST016). Data processed by DH.

Comments on denominator data - None.

Statistical methods:

Census data for PCOs were produced by ONS on the basis of best fit using two different methods. The 2001 Census Key Statistics tables were produced on the basis of best fit of Output Areas to PCOs and Standard tables (which are generally the more detailed tables, showing cross-tabulations between different variables) for health areas were produced on the basis of best fit of wards. The "two-method approach" used by ONS is a problem, in that the same variables for health areas appear as different totals in the Key Statistics and Standard tables. Some of these differences are also "significant". For a more detailed explanation see: http://www.statistics.gov.uk/census2001/cn_96.asp

Disclosure protection measures applied by the ONS to 2001 Census output for England and Wales are in place in order to prevent the inadvertent release of information about identifiable individuals. As a result, totals may sometimes not add up. For more details about disclosure control methods see: http://www.statistics.gov.uk/census2001/op5.asp

Percentages were obtained by dividing numbers of persons in households with limiting long-term illness by the appropriate total number of persons in households in the area.

Standardised illness ratios were calculated by multiplying age- and sex-specific illness rates for England and Wales (age-bands up to 65, 65-74 and 75+) by corresponding resident populations for each area.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several

organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. *The Census 2001 homepage*. Office for National Statistics, 2004. Available at: http://www.statistics.gov.uk/census2001/
2. Office for National Statistics. *1991 Census: Limiting long-term illness, Great Britain.* CEN 91. London: Office for National Statistics, 1993.

Updated: December 2009

Inability to work due to permanent sickness

Purpose:

To provide 2001 Census based information about resident populations prevented from working by permanent sickness.

Definition of indicator and its variants:

Proportion of residents in households unable to work because of long-term sickness or disability and corresponding sickness ratios.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number, percent and indirectly age-standardised sickness ratio	MFP	16+, working ages (16-59 (F), 16-64 (M))	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2001		03B_010VS_01_V2

Note: Data for PCOs have been produced from "best fit" of Output Areas.

Numerator:

Numerator data - Number of residents prevented from working by long-term sickness or disability.

Source of numerator data – Office for National Statistics (ONS): Standard Table 28 (S28). Data processed by the Department of Health (DH).

Comments on numerator data - The ONS Area Classification values for Census indicators are computed from Local Authority (LA) data. Strategic Health Authority (SHA) values are computed from Primary Care Organisation (PCO) data rather than LA.

Numbers of persons "permanently sick" are based on those ticking the reply "Do you have any long-term illness, health problem or disability which limits your daily activities or the work you can do?" and then "Last week, were you any of the following: permanently sick or disabled?".

Denominator:

Denominator data - The total number of residents in the area.

Source of denominator data - ONS: Standard Table 28 (S28). Data processed by DH.

Comments on denominator data - For those absent households for which no completed census form was received by ONS, certain data were imputed.

Statistical methods:

Census data for PCOs were produced by ONS on the basis of best fit using two different methods. The 2001 Census Key Statistics tables were produced on the basis of best fit of Output Areas to PCOs, and Standard tables (which are generally the more detailed tables, showing cross-tabulations between different variables) for health areas were produced on the basis of best fit of wards. The "two-method approach" used by ONS is a problem, in that the same variables for health areas appear as different totals in the Key Statistics and Standard tables. Some of these differences are also "significant". For a more detailed explanation see:
http://www.statistics.gov.uk/census2001/cn_96.asp

Disclosure protection measures applied by the ONS to 2001 Census output for England and Wales are in place in order to prevent the inadvertent release of information about identifiable individuals. As a result, totals may sometimes not add up. For more details about disclosure control methods see:
http://www.statistics.gov.uk/census2001/op5.asp

Percentages were obtained by dividing numbers of "permanently sick" residents by the corresponding total number of residents in the area.

Standardised sickness ratios for each sex were calculated by multiplying age- and sex-specific illness rates for England and Wales (age-bands 16-24, 25-44, 45-64, and 65-74) by corresponding resident populations for each area.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. *The Census 2001 homepage*. Office for National Statistics, 2004. Available at: http://www.statistics.gov.uk/census2001/
2. Office for National Statistics. *1991 Census: Limiting long-term illness, Great Britain.* CEN 91. London: Office for National Statistics, 1993.

Updated: December 2009

Mortality from all causes

Purpose:

To reduce mortality.

Definition of indicator and its variants:

Mortality from all causes (ICD-10 A00-Y99 equivalent to ICD-9 001-E999).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		03C_073NO_09_V1
Crude death rate	MFP	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		03C_073CRP1_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		03C_073CRP2_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <15, <75, 15-64, 65-74	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		03C_073SM00++_09_V1 03C_073SM0014_09_V1 03C_073SM0074_09_V1 03C_073SM1564_09_V1 03C_073SM6574_09_V1
		All ages, <15, <75, 15-64, 65-74			1993-09	03C_073SMT00++_09_V1 03C_073SMT0014_09_V1 03C_073SMT0074_09_V1 03C_073SMT1564_09_V1 03C_073SMT6574_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <15, <75, 15-64, 65-74	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		03C_073DR00++_09_V1 03C_073DR0014_09_V1 03C_073DR0074_09_V1 03C_073DR1564_09_V1 03C_073DR6574_09_V1
		All Ages#		1995-97		03C_073DR00++_97_V2
		All ages, <15, <75, 15-64, 65-74			1993-09	03C_073DRT00++_09_V1 03C_073DRT0014_09_V1 03C_073DRT0074_09_V1 03C_073DRT1564_09_V1 03C_073DRT6574_09_V1

Department of Health Public Service Agreement target monitoring baseline.

Numerator:

Numerator data - Deaths from all causes classified by underlying cause of death (ICD-10 A00-Y99 equivalent to ICD-9 001-E999), registered in the respective calendar year(s). Neonatal deaths are included in the age groups that contain those aged less than 1 year.

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards. For this indicator the following ICD-10/9 comparability ratios were used:

Males   All Ages: 1
Females   All Ages: 1

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. Twentieth Century Mortality Trends in England and Wales. *Office for National Statistics Health Statistics Quarterly*, No. 18, 2003: 5-17. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ18_revised_21Aug03.pdf
2. Brock A, Griffiths C. Trends in the mortality of young adults aged 15-44 in England and Wales, 1961-2001. *Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 22-31. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf

Updated: March 2011

Mortality from causes considered amenable to health care

Purpose:

To help reduce deaths from causes considered amenable to health care. Causes of death are included if there is evidence that they are amenable to healthcare interventions and – given timely, appropriate, and high quality care – death rates should be low among the age groups specified. Healthcare intervention includes preventing disease onset as well as treating disease. Two additional indictors are provided: 'mortality from causes considered amenable to health care (exc Ischaemic heart disease)' and 'mortality from causes other than those considered amenable to health care'. The difference between amenable and non-amenable causes in their trends over time may provide evidence of the increasing (or decreasing) effectiveness of health care.

Definition of indicator and its variants:

Mortality from causes considered amenable to health care (see "Numerator data" for definition).
Mortality from causes considered amenable to health care (exc ischaemic heart disease).
Mortality from causes other than those considered amenable to health care.

As from the November 2005 *Compendium* release this indicator replaces the 'mortality from potentially avoidable causes' indicator published in previous *Compendia*.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Indirectly age-standardised mortality ratio (SMRs) and number of deaths	MFP	Various <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		03D_074SMP1_09_V1 03D_074SMP2_09_V1 03D_074SMP3_09_V1
					1993-09	03D_074SMP1T_09_V1 03D_074SMP2T_09_V1 03D_074SMP3T_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	Various <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		03D_074DRP1_09_V1 03D_074DRP2_09_V1 03D_074DRP3_09_V1
					1993-09	03D_074DRP1T_09_V1 03D_074DRP2T_09_V1 03D_074DRP3T_09_V1

Numerator:

Numerator data – Deaths considered amenable to health care are defined as those from the following causes for the specific age groups stated. Deaths are classified by underlying cause of death, registered in the respective calendar years and analysed collectively (See "Further reading "):
- Intestinal infections (ICD-10 A00-A09, ICD-9 001-009, ages 0-14 years;
- Tuberculosis (ICD-10 A15-A19, B90; ICD-9 010-018, 137), ages 0-74 years;
- Other infectious diseases (diptheria, tetanus, poliomyelitis) (ICD-10 A36, A35, A80; ICD-9 032, 037, 045), ages 0-74 years;
- Whooping cough (ICD-10 A37, ICD-9 033), ages 0-14 years;
- Septicaemia (ICD-10 A40-A41, ICD-9 038), ages 0-74 years;
- Measles (ICD-10 B05, ICD-9 055), ages 1-14 years;
- Malignant neoplasm of colon and rectum (ICD-10 C18-C21, ICD-9 153-154), ages 0-74 years;
- Malignant neoplasm of skin (ICD-10 C44, ICD-9 173), ages 0-74 years;
- Malignant neoplasm of female breast (ICD-10 C50, ICD-9 174), ages 0-74 years;
- Malignant neoplasm of cervix uteri (ICD-10 C53, ICD-9 180), ages 0-74 years;
- Malignant neoplasm of unspecified part of the uterus and body of the uterus (ICD-10 C54-C55, ICD-9 179, 182), ages 0-44 years;
- Malignant neoplasm of testis (ICD-10 C62, ICD-9 186), 0-74 years;
- Hodgkin's disease (ICD-10 C81, ICD-9 201), ages 0-74 years;
- Leukaemia (ICD-10 C91-C95, ICD-9 204-208), ages 0-44 years;
- Diseases of the thyroid (ICD-10 E00-E07, ICD-9 240-246), ages 0-74 years;
- Diabetes mellitus (ICD-10 E10-E14, ICD-9 250), ages 0-49 years;
- Epilepsy (ICD-10 G40-G41, ICD-9 345), 0-74 years;
- Chronic rheumatic heart disease (ICD-10 I05-I09, ICD-9 393-398), ages 0-74 years;
- Hypertensive disease (ICD-10 I10-I13, I15; ICD-9 401-405), ages 0-74 years;
- Ischaemic heart disease (ICD-10 I20-I25, ICD-9 410-414), ages 0-74 years;
- Cerebrovascular disease (ICD-10 I60-I69, ICD-9 430-438), ages 0-74 years;

- All respiratory diseases (excl. pneumonia, influenza and asthma) (ICD-10 J00-J09, J20-J44, J47-J99; ICD-9 460-479, 488-492, 494-519), ages 1-14 years;
- Influenza (ICD-10 J10-J11, ICD-9 487), ages 0-74 years;
- Pneumonia (ICD-10 J12-J18, ICD-9 480-486), ages 0-74 years;
- Asthma (ICD-10 J45-J46, ICD-9 493), ages 0-44 years;
- Peptic ulcer (ICD-10 K25-K27, ICD-9 531-533), ages 0-74 years;
- Appendicitis (ICD-10 K35-K38, ICD-9 540-543), ages 0-74 years;
- Abdominal hernia (ICD-10 K40-K46, ICD-9 550-553), ages 0-74 years;
- Cholelithiasis & cholecystitis (ICD-10 K80-K81, ICD-9 574-575.1), ages 0-74 years;
- Nephritis and nephrosis (ICD-10 N00-N07, N17-N19, N25-N27; ICD-9 580-589), ages 0-74 years;
- Benign prostatic hyperplasia (ICD-10 N40, ICD-9 600), ages 0-74 years;
- Maternal deaths (ICD-10 O00-O99, ICD-9 630-676), ages 0-74 years;
- Congenital cardiovascular anomalies (ICD-10 Q20-Q28, ICD-9 745-747), ages 0-74 years;
- Perinatal deaths (all causes excl. stillbirths), ages 0-6 days;
- Misadventures to patients during surgical and medical care   (ICD-10 Y60-Y69, Y83-Y84; ICD-9 E870-E876, E878-E879), ages 0-74 years.

Deaths from causes considered amenable to health care (exc ischaemic heart disease) are defined as above with the exclusion of the deaths from ischeamic heart disease (ICD-10 I20-I25, ICD-9 410-414), ages 0-74 years.

Deaths from causes other than those considered amenable to health care are defined as deaths for ages 0-74 years excluding those deaths as defined above.

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator comparability ratios are not available for each of the specific causes and age-groups and adjustment is not possible. Trends should therefore be interpreted with caution as there is a potential discontinuity as a result of the change in ICD version.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data – The demoninator population used is that aged 0-74 years. Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methodologies used in the *Compendium*.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Wheller L, Baker A, Griffiths C and Ronney C. Trends in avoidable mortality in England and Wales, 1993-2005. *Office for National Statistics Health Statistics Quarterly*, No. 34, 2007: 6-25, Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ34.pdf
2. Nolte E & McKee M. *Does Healthcare Save Lives - Avoidable Mortality Revisited*. London: The Nuffield Trust, 2004.
3. Lakhani A et al. Creative use of existing clinical and health outcomes data to assess NHS performance in England: part 2 – more challenging aspects of monitoring. *BMJ*, 2005; 330: 1486-92.
4. Charlton JRH, Bauer R, Lakhani A. Outcome measures for district and regional health care planning. *Community Medicine*, 1984; 6: 306-315.
5. Brock A, Griffiths C. Trends in the mortality of young adults aged 15-44 in England and Wales, 1961-2001. *Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 22-31. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf

Updated: March 2011

Life expectancy

Purpose:

To help reduce premature mortality and facilitate planning of health services at local level.

Definition of indicator and its variants:

Life expectancy at birth (a measure of mortality) for an area in a given period as an estimate of the number of years a new-born baby would survive, were he or she to experience the particular area's age-specific mortality rates for that time period throughout his or her life.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number and rank	MF	All ages, 65+	E&W, E, GOR, SHA, LA, PCO CTY	2007-09	1991-93 to 2006-08	03E_186NOP1_09_V1 03E_186NOP2_09_V1

Numerator:

Numerator data - Estimated number of years of life expectancy at birth and at age 65 based on a three-year period for the relevant years.

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data - The figures reflect mortality among those living in the area in each time period. They are not the number of years a baby born in the area in each time period could actually expect to live, both because the death rates of the area are likely to change in the future and because many of those born in the area will live elsewhere for at least some part of their lives.

Life expectancy at birth is also not a guide to the remaining expectancy of life at any given age. For example, if female life expectancy at birth was 80 years for a particular area, life expectancy of women aged exactly 75 years in that area would exceed 5 years. This reflects the fact that survival from a particular age depends only on the mortality rates beyond that age, whereas survival from birth is based on mortality rates for all ages.

The figures are rolling three-year averages produced by aggregating deaths and population estimates for each successive overlapping three-year period. They are presented as the current data for 2006-08 (including confidence intervals) and as trend data (without confidence intervals) for 1991-1993 to 2006-2008 to show change over time. The deaths of non-residents are included in the figures for England and Wales but are excluded from data for other areas. Two Local Authorities (City of London and Isles of Scilly) are excluded from the results because of small numbers of deaths and populations in these areas.

The population estimates used for the calculation of figures for this indicator are based on the 2001 Census. The current interim life tables are published by ONS. These tables are based on the mid-year population estimates for 2006 and 2007 revised and published in August 2008, and 2008 estimates published in August 2009 and corresponding data on births, infant deaths by individual age from those years.

Denominator:

Denominator data - See "Numerator data".

Source of denominator data - See "Numerator data".

Comments on denominator data - See "Numerator data".

Statistical methods:

Abridged life tables were constructed using standard methods. Separate tables were constructed for males and females. The tables were created using annual mid-year population estimates and deaths registered in each year. All figures presented here are for life expectancy at birth. The Government Actuary's Department (GAD) compiles data on life expectancy, using data derived from Registrars General on population and deaths. Data are available in the form of life tables on both a period and a cohort basis.

The calculation of the confidence intervals was made using the method developed by Chiang. A report which details research undertaken by the Office for National Statistics on comparing methodologies to enable the calculation of confidence intervals for life expectancy at birth has now been published as No 33 in the National Statistics Methodological Series. This report, "Life expectancy at birth: methodological options for small populations", also presents research carried out to establish if there is a minimum population size below which the

calculation of life expectancy may not be considered feasible. It concludes with a summary of methodological conclusions and considers how these could be applied to the calculation of life expectancy at birth for wards in England and Wales. A copy of the report can be found on the ONS website at: http://www.statistics.gov.uk/statbase/Product.asp?vlnk=10626

Examples of life tables constructed for the comparison of methodologies are also available in an Excel workbook, "Life Table Templates" which can be found on the ONS website at: http://www.statistics.gov.uk/statbase/Product.asp?vlnk=8841

Life expectancy at age 65 uses the same methodology as is used for calculating life expectancy at birth.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Hudson M and Kyte Lynsey. Life expectancy at birth and at age 65 by local areas in the United Kingdom, 2007-09. Office for National Statistics, *Health Statistical Bulletin* , 19 October 2010. Available at: http://www.statistics.gov.uk/pdfdir/liex1010.pdf
2. Office for National Statistics. Life expectancy at birth and at age 65 by local areas in the United Kingdom, 2006-08. *Health Statistical Bulletin*, 21 October 2009. Available at: http://www.statistics.gov.uk/pdfdir/liex1009.pdf
3. Office for National Statistics. News Release: Life expectancy at birth remains highest in the South of England, 21 October 2009. Available at: http://www.statistics.gov.uk/pdfdir/liexnr1009.pdf
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Updated: March 2011

Self-assessed general health

Purpose:

To help reduce levels of sickness and ill health and promote healthy lifestyles.

Definition of indicator and its variants:

Proportion of adults rating their general health as "very good" or "good".

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number, percent and age-standardised percent	MFP	16+	E, GOR, ONS area, SHA, CTY	2001-03 2002-04 2003-05 2004-06 2005-07 2006-08	1998-08	03F_301VSP1_08_V1 03F_301VSP2_08_V1

Numerator:

Numerator data - The number of persons aged 16+ rating their general health as "very good" or "good" on a five point scale ranging between "very good", "good", "fair", "bad", and "very bad" in a sample survey of the health of the population of England.

Source of numerator data - Health Survey for England (HSE), commissioned by the Department of Health and since April 2005 The Information Centre for health and social care and carried out by the Joint Health Survey Unit of Social and Community Planning Research and of the Department of Epidemiology and Public Health at University College, London.

Comments on numerator data - The results shown are based on respondents' subjective views and self-assessments of their health and, as such, self-reported illnesses may not necessarily correspond with medical diagnoses. Some conditions such as mental illness have been shown to be under-reported in health surveys. Only people living in private households were included in the sample. Those who were living in institutions, or unavailable for interview as a result of a serious medical problem, were excluded.

Denominator:

Denominator data - Respondents aged 16+ in a sample survey of the health of the population of England.

Source of denominator data - See "Numerator data".

Comments on denominator data - The HSE is a series of annual surveys that began in 1991 with the aim of monitoring the health of the population. It was designed to measure health and health related behaviours in adults and children living in private households in England. For each participant, the survey included an interview and a physical examination by a nurse, at which various physical measurements, tests, and samples of blood and saliva were collected. These measurements provided biomedical information about known risk factors associated with disease and objective validation for self-reported health behaviour.

Statistical methods:

The figures have been provided for three-year periods (based on three-year moving averages) and for calendar years. All calculations of sub-national observed estimates at Government Office Region, ONS area, Strategic Health Authority and County levels, age-standardised rates, confidence intervals and significance tests were carried out by the National Centre for Social Research (see Annex 9 for details).

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Sproston K and Primatesta P Eds. *Health Surveyfor England 2003*, National Centre for Social Research, London: TSO, 2004. Available at:

http://www.archive2.official-documents.co.uk/document/deps/doh/survey03/card/card01.htm

2. Scholes S, Prescott A and Bajekal M. *Health and lifestyle indicators for Strategic Health Authorities, 1994-2002*, London: National Centre for Social Research, 2004. Available at: http://www.dh.gov.uk/assetRoot/04/07/77/31/04077731.pdf

3. Joint Health Surveys Unit, National Centre for Social Research and Department of Epidemiology and Public Health, the Royal Free and University College Medical School, London. *The Health Survey for England - Cardiovascular disease*. London: Her Majesty's Stationery Office, 1998.

Updated: November 2010

Limiting longstanding illness

Purpose:

To help reduce levels of sickness and ill health.

Definition of indicator and its variants:

Proportion of adults who report having one or more chronic conditions which limit their activities.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number, percent and age-standardised percent	MFP	16+	E, GOR, ONS area, SHA, CTY	2001-03 2002-04 2003-05 2004-06 2005-07 2006-08	1998-08	03G_302VSP1_08_V1 03G_302VSP2_08_V1

Numerator:

Numerator data - The number of persons aged 16+ with one or more chronic self-reported limiting conditions in a sample survey of the health of the population of England.

Source of numerator data - Health Survey for England (HSE), commissioned by the Department of Health and since April 2005 The Information Centre for health and social care and carried out by the Joint Health Survey Unit of Social and Community Planning Research and of the Department of Epidemiology and Public Health at University College, London.

Comments on numerator data - Respondents were asked whether they had any illness, disability, or infirmity that had troubled them over a period of time or was likely to affect them over a period of time. Those who reported such an illness were asked about the nature of their condition (details of up to six longstanding illnesses were recorded) and whether it limited their activities in any way. Questions on longstanding illness have been asked in the Health Survey series since it began, while the question on limiting longstanding illness was introduced in 1996. Longstanding illnesses were coded into categories defined in the International Classification of Diseases (ICD), but it should be noted that the ICD is used mostly to classify conditions according to the cause, whereas HSE classifies according to the reported symptoms.

Denominator:

Denominator data - Respondents aged 16+ in a sample survey of the health of the population of England.

Source of denominator data - See "Numerator data".

Comments on denominator data - The HSE is a series of annual surveys that began in 1991 with the aim of monitoring the health of the population. It was designed to measure health and health related behaviours in adults and children living in private households in England. For each participant, the survey included an interview and a physical examination by a nurse, at which various physical measurements, tests, and samples of blood and saliva were collected. These measurements provided biomedical information about known risk factors associated with disease and objective validation for self-reported health behaviour.

Statistical methods:

The figures have been provided for three-year periods (based on three-year moving averages) and for calendar years. All calculations of sub-national observed estimates at Government Office Region, ONS area, Strategic Health Authority and County levels, age-standardised rates, confidence intervals and significance tests were carried out by the National Centre for Social Research (see Annex 9 for details).

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Sproston K and Primatesta P Eds. *Health Surveyfor England 2003*, National Centre for Social Research, London: TSO, 2004. Available at:
   http://www.archive2.official-documents.co.uk/document/deps/doh/survey03/card/card01.htm
2. Scholes S, Prescott A and Bajekal M. *Health and lifestyle indicators for Strategic Health Authorities, 1994-2002*, London: National Centre for Social Research, 2004. Available at:
   http://www.dh.gov.uk/assetRoot/04/07/77/31/04077731.pdf
3. Joint Health Surveys Unit, National Centre for Social Research and Department of Epidemiology and Public Health, the Royal Free and University College Medical School, London. *The Health Survey for England - Cardiovascular disease*. London: Her Majesty's Stationery Office, 1998.

Updated: November 2010

Acute sickness

Purpose:

To reduce levels of sickness and ill health.

Definition of indicator and its variants:

The prevalence of self-reported acute sickness among adults in the two weeks preceding a survey interview.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number, percent and age-standardised percent	MFP	16+	E, GOR, ONS area, SHA, CTY	2001-03 2002-04 2003-05 2004-06 2005-07 2006-08	1998-08	03H_303VSP1_08_V1 03H_303VSP2_08_V1

Numerator:

Numerator data - The number of persons aged 16+ reporting acute sickness in the two weeks preceding the survey interview, in a sample survey of the health of the population of England.

Source of numerator data - Health Survey for England (HSE), commissioned by the Department of Health and since April 2005 The Information Centre for health and social care and carried out by the Joint Health Surv*ey Unit of Social and Community Planning Research and of the Department of Epidemiology and Public Health at University College, London.

Comments on numerator data - Acute sickness was defined as having to cut down, in the two weeks preceding the interview, on usual activities (in the house, at school, at work or in free time) due to illness or injury. In order to assess its severity, those who reported having acute sickness were asked on how many days in the past two weeks had they been affected.

Denominator:

Denominator data - Respondents aged 16+ in a sample survey of the health of the population of England.

Source of denominator data - See "Numerator data".

Comments on denominator data - The HSE is a series of annual surveys that began in 1991 with the aim of monitoring the health of the population. It was designed to measure health and health related behaviours in adults and children living in private households in England. For each participant, the survey included an interview and a physical examination by a nurse, at which various physical measurements, tests, and samples of blood and saliva were collected. These measurements provided biomedical information about known risk factors associated with disease and objective validation for self-reported health behaviour.

Statistical methods:

The figures have been provided for three-year periods (based on three-year moving averages) and for calendar years. All calculations of sub-national observed estimates at Government Office Region, ONS area, Strategic Health Authority and County levels, age-standardised rates, confidence intervals and significance tests were carried out by the National Centre for Social Research (see Annex 9 for details).

Further reading:

1. Sproston K and Primatesta P Eds. *Health Surveyfor England 2003*, National Centre for Social Research, London: TSO, 2004. Available at:
   http://www.archive2.official-documents.co.uk/document/deps/doh/survey03/card/card01.htm
2. Scholes S, Prescott A and Bajekal M. *Health and lifestyle indicators for Strategic Health Authorities, 1994-2002*, London: National Centre for Social Research, 2004. Available at:
   http://www.dh.gov.uk/assetRoot/04/07/77/31/04077731.pdf
3. Joint Health Surveys Unit, National Centre for Social Research and Department of Epidemiology and Public Health, the Royal Free and University College Medical School, London. *The Health Survey for England - Cardiovascular disease.* London: Her Majesty's Stationery Office, 1998.

Updated: November 2010

Adults on prescribed medication

Purpose:

To reduce levels of sickness and ill health.

Definition of indicator and its variants:

Proportion of adults on prescribed medication.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number, percent and age-standardised percent	MFP	16+	E, GOR, ONS area, SHA, CTY	2001-03 2005-07 2006-08	1998 2000-03 2005-08	03I_304VSP1_08_V1 03I_304VSP2_08_V1

Numerator:

Numerator data - The number of persons aged 16+ currently taking at least one prescribed medicine in a sample survey of the health of the population of England.

Source of numerator data - Health Survey for England (HSE), commissioned by the Department of Health and since April 2005 The Information Centre for health and social care and carried out by the Joint Health Survey Unit of Social and Community Planning Research and of the Department of Epidemiology and Public Health at University College, London.

Comments on numerator data - As part of the nurse visit, information on the use of prescribed medicine was collected and the name of each type of prescribed medicine was recorded. The nurse allocated medicines to a 6-digit code corresponding to the British National Formulary (BNF) listing. Any medicines that nurses were unable to code were checked by the office coding staff. It should be noted that the Health Survey assesses the reported use of prescribed medicines and the findings reported here may differ from levels assessed using information about dispensed medicines. Contraceptives are not included as prescribed medicines.

All respondents were asked about their use of prescribed medicines and these have been classified into 13 broad pharmacological groups. For most categories there was little difference in the proportion of men and women using prescribed medicines. The most commonly taken types of medicine by both men and women were those for cardiovascular disease and for the central nervous system.

Denominator:

Denominator data - Respondents aged 16+ in a sample survey of the health of the population of England.

Source of denominator data - See "Numerator data".

Comments on denominator data - The HSE is a series of annual surveys that began in 1991 with the aim of monitoring the health of the population. It was designed to measure health and health related behaviours in adults and children living in private households in England. The current "full" sample size of the HSE comprises about 16,000 adults aged 16 and over. For each participant, the survey included an interview and a physical examination by a nurse, at which various physical measurements, tests, and samples of blood and saliva were collected. These measurements provided biomedical information about known risk factors associated with disease and objective validation for self-reported health behaviour.

Statistical methods:

The figures have been provided for three-year periods (based on three-year moving averages) and for calendar years. All calculations of sub-national observed estimates at Government Office Region, ONS area, Strategic Health Authority and County levels, age-standardised rates, confidence intervals and significance tests were carried out by the National Centre for Social Research (see Annex 9 for details).

Further reading:

1. Sproston K and Primatesta P Eds. *Health Survey for England 2003*, National Centre for Social Research, London: TSO, 2004. Available at:
   http://www.archive2.official-documents.co.uk/document/deps/doh/survey03/card/card01.htm

2. Scholes S, Prescott A and Bajekal M. *Health and lifestyle indicators for Strategic Health Authorities, 1994-2002*, London: National Centre for Social Research, 2004. Available at: http://www.dh.gov.uk/assetRoot/04/07/77/31/04077731.pdf
3. Joint Health Surveys Unit, National Centre for Social Research and Department of Epidemiology and Public Health, the Royal Free and University College Medical School, London. *The Health Survey for England - Cardiovascular disease*. London: Her Majesty's Stationery Office, 1998.

Updated: November 2010

General Health Questionnaire GHQ12 score

Purpose:

To reduce levels of sickness and ill health.

Improving the life outcomes for those people with mental health problems continues to be a priority for the government.To this end it is important to monitor the percentage of people who suffer from poor mental health, and to explore how this proportion varies across sections of society.

Definition of indicator and its variants:

The proportion of adults with a General Health Questionnaire GHQ12 score of 4 and over.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number. percent and age-standardised percent	MFP	16+	E, GOR, ONS area, SHA, CTY	2001-03 2002-04 2003-05 2004-06	1998-06 2008	03J_321VSP1_06_V1 03J_321VSP2_08_V1

Numerator:

Numerator data - The number of persons aged 16+ with a score of 4 or over on the 12-item General Health Questionnaire (GHQ12) in a sample survey of the health of the population of England.

Source of numerator data - Health Survey for England (HSE), commissioned by the Department of Health and since April 2005 The Information Centre for health and social care and carried out by the Joint Health Survey Unit of Social and Community Planning Research and of the Department of Epidemiology and Public Health at University College, London.

Comments on numerator data - The general health questionnaire (GHQ) was used as an indicator of possible mental health problems. This questionnaire consists of 12 questions concerning happiness, depression, anxiety, sleep disturbance, and ability to cope over the four weeks preceding the survey interview. As in previous Health Surveys a score of 4 or more was used as the threshold to identify respondents with possible psychiatric disorder, and is referred to as a 'high GHQ score'. The questionnaire was administered in self-completion format, to all respondents. Scores were calculated only for those respondents who had answered all 12 questions.

Denominator:

Denominator data - Respondents aged 16+ in a sample survey of the health of the population of England.

Source of denominator data - See "Numerator data".

Comments on denominator data - The HSE is a series of annual surveys that began in 1991 with the aim of monitoring the health of the population. It was designed to measure health and health related behaviours in adults and children living in private households in England. The current "full" sample size of the HSE comprises about 16,000 adults aged 16 and over. For each participant, the survey included an interview and a physical examination by a nurse, at which various physical measurements, tests, and samples of blood and saliva were collected. These measurements provided biomedical information about known risk factors associated with disease and objective validation for self-reported health behaviour.

Statistical methods:

The figures have been provided for three-year periods (based on three-year moving averages) and for calendar years. All calculations of sub-national observed estimates at Government Office Region, ONS area, Strategic Health Authority and County levels, age-standardised rates, confidence intervals and significance tests were carried out by the National Centre for Social Research (see Annex 9 for details).

Further reading:

1. Sproston K and Primatesta P Eds. *Health Surveyfor England 2003*, National Centre for Social Research, London: TSO, 2004. Available at:
   http://www.archive2.official-documents.co.uk/document/deps/doh/survey03/card/card01.htm

2. Scholes S, Prescott A and Bajekal M. *Health and lifestyle indicators for Strategic Health Authorities, 1994-2002*, London: National Centre for Social Research, 2004. Available at: http://www.dh.gov.uk/assetRoot/04/07/77/31/04077731.pdf

3. Joint Health Surveys Unit, National Centre for Social Research and Department of Epidemiology and Public Health, the Royal Free and University College Medical School, London. *The Health Survey for England - Cardiovascular disease*. London: Her Majesty's Stationery Office, 1998.

Updated: November 2010

Emergency hospital admissions: all conditions

Purpose:

The purpose of this indicator is to help monitor NHS success in prevention and treatment outside hospital.

Emergency admissions to hospital can be avoided if local systems are put in place to identify those at risk and target services, particularly primary care services. There was a PPF target for 2002/3 for emergency admissions to grow at less than 2%. The majority of patients admitted to hospital as an emergency are older people. In order to avoid perverse incentives that might keep older people out of hospital when it is legitimate for them to be admitted, the indicator is presented as a rate for patients of all ages. This indicator also acts as a proxy for the delivery of services for older people generally.

Definition of indicator and its variants:

Emergency admissions to hospital, irrespective of condition.

Statistic	Sex	Age group	Organisation	Period		File_worksheet name
			(see glossary)	Current data	Trend data	
Indirectly age and sex-standardised rate per 100,000 (standardised to FY 2005/06)	P F M	All Ages	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County, LA (boundaries as at April 2009); PCO (boundaries as at October 2006); CTY.	FY 2008/09	FY 2002/03 FY 2003/04 FY 2004/05 FY 2005/06 FY 2006/07 FY 2007/08	03K_520ISR7GP_09_V1 03K_520ISR7GF_09_V1 03K_520ISR7GM_09_V1

Numerator:

Numerator data - The number of finished and unfinished continuous inpatient (CIP) spells, excluding transfers, for patients of all ages with an emergency method of admission in the respective financial year.

The following fields and values are used for the numerator:

    The first episode in the CIP spell has:
        ADMISORC not = 51, 52 or 53 (admission source);
        AND EPITYPE = 1 (episode type);
        AND SEX = 1 or 2 (sex);
        AND EPIORDER = 1 (episode order);
        AND ADMIMETH = 21, 22, 23, 24 or 28 (emergency admission method);
        AND EPISTART >= 01/04/YYYY and EPISTART <= 31/03/YYYY+1 (episode start date within year);
        AND CLASSPAT = 1 (patient classification);
        AND STARTAGE is either 0-120 or 7001-7007 (age at start of episode);
        AND DOB not 01/01/1900 or 01/01/1901 (date of birth).

    Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
        SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

    Counts are by:
        age / sex / organisation of residence in CIP spell (values for England are aggregates of these)

    where:
        age bands are <1, 1-4, 5-9, … , 80-84, 85+;
        sex is 1, 2 (male and female).

Source of numerator data - Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year. England, The NHS Information Centre for health and social care.

Comments on numerator data - It is important, for the purposes of measuring incidence, to count persons as opposed to episodes of care, as each person with the condition should only be counted once during each admission. This is done by counting CIP spells (epiorder 1) only. Some transfers, which are also coded epiorder 1

and emergency, could lead to double counting. In order to avoid this, spells which have an ADMISORC of 51-53, indicating a transfer from another NHS Trust, are excluded.

Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March. In order to avoid double counting that spell in both financial years, only spells which started during the financial year of analysis are counted.

Spells are attributed to the organisation of residence, based on the numerator.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details).

Denominator:

Denominator data - The denominator is the resident population for the respective organisation.

Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 29 September 2008.

For further details on revisions to ONS mid-year population estimates, and their availability, see the comments in the specification for the 'Estimates of resident population' indicator.

> Counts are by:
> > age / sex / organisation of residence (values for England are aggregates of these)

> where:
> > age bands are <1, 1-4, 5-9, … , 80-84, 85+;
> > sex is 1, 2 (male and female).

Source of denominator data - Office for National Statistics.

Statistical methods:

The indicator is indirectly standardised by age and sex. The person-based rate is standardised by age and sex using England age and sex rates as standards. The gender-specific rates are standardised by age using person-based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age and sex of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in admission rate from a previous year, plus the statistical significance of this change, have also been calculated. A positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator - This is a generic, cross-sectional annual comparative indicator, acting as a proxy for outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator – Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation and Local Authority level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national**

rate, the difference between the two rates is considered statistically significant. If the confidence intervals for the two rates overlap, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity - A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may determine whether a patient gets admitted or not and may influence rates. Differences in case-mix (beyond that accounted for by standardisation), comorbidities and other potential risk factors also contribute to the variation. Current data do not allow assignment of severity of illness across continuous inpatient spells, nor do they allow adjustment for any of these factors. We have tried to deal with this constraint partially by presenting the data in clusters that are similar with respect to organisation type. Gender-specific data standardised to person rates are available.

Other potential confounding factors - The patterns of providing care may vary between organisations in terms of: extent of treatment in primary care settings; referral policies and practices; hospital outpatient facilities/walk-in clinics; and hospital inpatient admission policies.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess the extent to which admissions were potentially avoidable are recommended.

Relevant national initiatives:

This indicator was part of the NHS Performance Indicators published by the Department of Health up to 2002.

Further reading:

1. NHS Executive. *Clinical Effectiveness Indicators – A Consultation Document.* London: Department of Health, 1998.
2. Department of Health. *NHS Performance Indicators* . London: Department of Health, 2002.

Updated: December 2010

Emergency hospital admissions: acute conditions usually managed in primary care

Purpose:

The purpose of the indicator is to help monitor potentially avoidable emergency hospital admissions for certain acute illnesses that are amenable to management in a primary care setting through, for example, better support in the management of illnesses in the home (providing support as well as facilitating access to health advice and therapy through NHS Direct and enhanced primary care).

Definition of indicator and its variants:

Emergency admissions to hospital of persons with acute conditions (ear/nose/throat infections, kidney/urinary tract infections, heart failure) usually managed in primary care.

Statistic	Sex	Age group	Organisation	Period		File_worksheet name
			(see glossary)	Current data	Trend data	
Indirectly age and sex-standardised rate per 100,000 (standardised to FY 2005/06)	P F M	All Ages	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County, LA (boundaries as at April 2009); PCO (boundaries as at October 2006); CTY.	FY 2008/09	FY 2002/03 FY 2003/04 FY 2004/05 FY 2005/06 FY 2006/07 FY 2007/08	03L_521ISR7EP_09_V1 03L_521ISR7EF_09_V1 03L_521ISR7EM_09_V1

Numerator:

Numerator data - The number of finished and unfinished continuous inpatient (CIP) spells, excluding transfers, for patients with an emergency method of admission and with any of the following primary diagnoses (DIAG_01in the 1st episode of the spell, ICD 10 codes) in the respective financial year:

Ear, nose and throat infections
- H66.0 - H66.4, H66.9   Suppurative and unspecified otitis media;
- J02.0, J02.8, J02.9   Acute pharyngitis;
- J03.0, J03.8, J03.9   Acute tonsillitis;
- J04.0   Acute laryngitis;
- J06.0, J06.8, J06.9   Acute upper respiratory infections of multiple and unspecified sites;
- J31.0 - J31.2   Chronic rhinitis, nasopharyngitis and pharyngitis.

Kidney / urinary tract infections
- N15.9   Renal tubulo-interstitial disease, unspecified;
- N39.0   Urinary tract infection, site not specified;
- N30.0   Acute cystitis.

Heart failure
- I50.0, I50.1, I50.9   Heart failure;
- I11.-   Hypertensive heart disease.

The following fields and values are used for the numerator:

The first episode in the CIP spell has:
DIAG_01 in the valid list for this indicator (primary diagnosis);
AND ADMISORC not = 51, 52 or 53 (admission source);
AND EPITYPE = 1 (episode type);
AND SEX = 1 or 2 (sex);
AND EPIORDER = 1 (episode order);
AND ADMIMETH = 21, 22, 23, 24 or 28 (admission method);
AND EPISTART is >= 01/04/YYYY and EPISTART <= 31/03/YYYY+1 (episode start date);
AND CLASSPAT = 1 (patient classification);
AND STARTAGE is 0-120 or 7001-7007 (age at start of episode);
AND DOB not 01/01/1900 or 01/01/1901 (date of birth).

Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Counts are by:
age / sex / organisation of residence in CIP spell (values for England are aggregates of these)

where:
age bands are <1, 1-4, 5-9, … , 80-84, 85+;
sex is 1, 2 (male and female).

Source of numerator data **–** Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year. England, The NHS Information Centre for health and social care.

Comments on numerator data **–** It is important, for the purposes of measuring incidence, to count persons as opposed to episodes of care, as each person with the condition should only be counted once during each admission. This is done by counting CIPS (epiorder 1) only. Some transfers, which are also coded epiorder 1 and emergency, could lead to double counting. In order to avoid this, spells which have an ADMISORC of 51-53, indicating a transfer from another NHS Trust, are excluded.

Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March. In order to avoid double counting that spell in both financial years, only spells which started during the financial year of analysis are counted.

Deaths in the community prior to admission are not included, nor are patients who get treated in the community, as data about them are not available.

Emergency method of admission and primary diagnosis are used to distinguish between new disease and readmission for the same problem previously treated in hospital. However, there could be double counting if the readmission is coded as an emergency and has the same primary diagnosis.

Spells are attributed to the organisation of residence, based on the numerator.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). These show the proportion of diagnoses not coded. There may be variation between hospitals in the way that they code diagnoses to the fourteen diagnosis fields in each episode, particularly primary diagnosis. For instance, they may code in the order in which diagnoses were made, or according to the perceived importance or complexity. This may affect whether a particular spell is selected for inclusion in the numerator of this indicator.

Denominator:

Denominator data **-** The denominator is the resident population for the respective organisation.

Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 29 September 2008.

For further details on revisions to ONS mid-year population estimates, and their availability, see the comments in the specification for the 'Estimates of resident population' indicator.

Counts are by:
age / sex / organisation of residence (values for England are aggregates of these)

where:
age bands are <1, 1-4, 5-9, … , 80-84, 85+;
sex is 1, 2 (male and female).

Source of denominator data **-** Office for National Statistics.

Statistical Methods:

The indicator is indirectly standardised by age and sex. The person-based rate is standardised by age and sex using England age and sex rates as standards. The gender-specific rates are standardised by age using person based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it

had experienced the same event rates as those of patients in England, given the mix of age and sex of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in admission rate from a previous year, plus the statistical significance of this change, have also been calculated. A positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator **-** This is a condition-specific, cross-sectional annual comparative indicator, acting as a proxy for outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator – Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals **-** Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation and Local Authority level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence interval overlaps the national rate, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity **-** A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may determine whether a patient gets admitted or not and may influence rates. Differences in case-mix (beyond that accounted for by standardisation), comorbidities and other potential risk factors also contribute to the variation. Current data do not allow assignment of severity of illness across continuous inpatient spells, nor do they allow adjustment for any of these factors. We have tried to deal with this constraint partially by presenting the data in clusters that are similar with respect to organisation type. Gender-specific data standardised to person rates are available.

Other potential confounding factors **-** The patterns of providing care may vary between organisations in terms of: extent of treatment in primary care settings; referral policies and practices; accessibility of accident and emergency facilities; hospital outpatient facilities/walk-in clinics; and hospital inpatient admission policies and practices.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess the extent to which admissions were potentially avoidable are recommended.

Relevant national initiatives:

This indicator was part of the NHS Performance Indicators published by the Department of Health up to 2002.

Further reading:

1. NHS Executive. *Clinical Effectiveness Indicators – A Consultation Document.* London: Department of Health, 1998.
2. Department of Health. *NHS Performance Indicator.* London: Department of Health, 2002.
3. Lakhani A, Coles J, Eayres D, Spence C, Rachet B. Creative use of existing clinical and health outcomes data to assess NHS performance in England: Part 1—performance indicators closely linked to clinical care. *BMJ* 2005;330: 1426-31.

Updated: December 2010

Emergency hospital admissions: chronic conditions usually managed in primary care

Purpose:

The purpose of the indicator is to help monitor potentially avoidable emergency hospital admissions for certain chronic illnesses that are amenable to management in a primary care setting. Admissions may be avoided through, for example, better support in the management of illnesses in the home (providing support as well as facilitating access to health advice and therapy through NHS Direct and enhanced primary care).

Definition of indicator and its variants:

Emergency admissions to hospital of persons with chronic conditions (asthma, diabetes) usually managed in primary care.

Statistic	Sex	Age group	Organisation	Period		File_worksheet name
			(see glossary)	Current data	Trend data	
Indirectly age and sex-standardised rate per 100,000 (standardised to FY 2005/06)	P F M	All Ages	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County, LA (boundaries as at April 2009); PCO (boundaries as at October 2006); CTY.	FY 2008/09	FY 2002/03 FY 2003/04 FY 2004/05 FY 2005/06 FY 2006/07 FY 2007/08	03M_522ISR7FP_09_V1 03M_522ISR7FF_09_V1 03M_522ISR7FM_09_V1

Numerator:

Numerator data - The number of finished and unfinished continuous inpatient spells (CIPS), excluding transfers, for patients with an emergency method of admission and with any of the following primary diagnoses (DIAG_01 in the 1st episode of the spell, ICD 10 codes) in the respective financial year:

Asthma:

- J45.-   Asthma;
- J46.-   Status asthmaticus.

Diabetes:

- E10.-   Insulin-dependent diabetes mellitus;
- E11.-   Non-insulin-dependent diabetes mellitus;
- E12.-   Malnutrition-related diabetes mellitus;
- E13.-   Other specified diabetes mellitus;
- E14.-   Unspecified diabetes mellitus.

The following fields and values are used for the numerator:

The first episode in the CIP spell has:
DIAG_01 in the valid list for this indicator (primary diagnosis);
AND ADMISORC not = 51, 52 or 53 (admission source);
AND EPITYPE = 1 (episode type);
AND SEX = 1 or 2 (sex);
AND EPIORDER = 1 (episode order);
AND ADMIMETH = 21, 22, 23, 24 or 28 (admission method);
AND EPISTART is >= 01/04/YYYY and EPISTART <= 31/03/YYYY+1 (episode start date);
AND CLASSPAT = 1 (patient classification);
AND STARTAGE is 0-120 or 7001-7007 (age at start of episode);
AND DOB not 01/01/1900 or 01/01/1901 (date of birth).

Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Counts are by:

age / sex / organisation of residence in CIP spell (values for England are aggregates of these)

where:
age bands are <1, 1-4, 5-9, … , 80-84, 85+;
sex is 1, 2 (male and female).

Source of numerator data **–** Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year. England, The NHS Information Centre for health and social care.

Comments on numerator data **–** It is important, for the purposes of measuring incidence, to count persons as opposed to episodes of care, as each person with the condition should only be counted once during each admission. This is done by counting CIPS (epiorder 1) only. Some transfers, which are also coded epiorder 1 and emergency, could lead to double counting. In order to avoid this, spells which have an ADMISORC of 51-53, indicating a transfer from another NHS Trust, are excluded.

Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March. In order to avoid double counting that spell in both financial years, only spells which started during the financial year of analysis are counted.

Deaths in the community prior to admission are not included, nor are patients who get treated in the community, as data about them are not available.

Emergency method of admission and primary diagnosis are used to distinguish between new disease and readmission for the same problem previously treated in hospital. However, there could be double counting if the readmission is coded as an emergency and has the same primary diagnosis.

Spells are attributed to the organisation of residence, based on the numerator.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). These show the proportion of diagnoses not coded. There may be variation between hospitals in the way that they code diagnoses to the fourteen diagnosis fields in each episode, particularly primary diagnosis. For instance, they may code in the order in which diagnoses were made, or according to the perceived importance or complexity. This may affect whether a particular spell is selected for inclusion in the numerator of this indicator.

Denominator:

Denominator data **-** The denominator is the resident population for the respective organisation.

Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 29 September 2008.

For further details on revisions to ONS mid-year population estimates, and their availability, see the comments in the specification for the 'Estimates of resident population' indicator.

Counts are by:
age / sex / organisation of residence (values for England are aggregates of these)

where:
age bands are <1, 1-4, 5-9, … , 80-84, 85+;
sex is 1, 2 (male and female).

Source of denominator data **-** Office for National Statistics.

Comments on denominator data - Ideally, the denominator should include only patients in the community with asthma or diabetes. In the absence of routine data on such patients, the total resident population is used as a denominator.

Statistical Methods:

The indicator is indirectly standardised by age and sex. The person-based rate is standardised by age and sex using England age and sex rates as standards. The gender-specific rates are standardised by age using person-based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age and sex of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in admission rate from a previous year, plus the statistical significance of this change, have also been calculated. A positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator **-** This is a condition-specific, cross-sectional annual comparative indicator, acting as a proxy for outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator – Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals **-** Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation and Local Authority level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence interval overlaps the national rate, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity **-** A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may determine whether a patient gets admitted or not and may influence rates. Differences in case-mix (beyond that accounted for by standardisation), comorbidities and other potential risk factors also contribute to the variation. Current data do not allow assignment of severity of illness across continuous inpatient spells, nor do they allow adjustment for any of these factors. We have tried to deal with this constraint partially by presenting the data in clusters that are similar with respect to organisation type. Gender-specific data standardised to person rates are available.

Other potential confounding factors **-** There may be variation in the prevalence of diabetes between residents of different organisations. In particular, it is known that Type 2 diabetes is up to six times more common in people of South Asian descent and up to three times more common amongst those of African and Afro-Caribbean origin. Despite this, the indicator is still of value, as many of these are potentially preventable admissions, irrespective of the prevalence of diabetes. The patterns of providing care may vary between organisations in terms of: extent of treatment in primary care settings; referral policies and practices; accessibility of accident and emergency facilities; hospital outpatient facilities / walk-in clinics; and hospital inpatient admission policies and practices.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess the extent to which admissions were potentially avoidable are recommended.

Relevant national initiatives:

This indicator was part of the NHS Performance Indicators published by the Department of Health up to 2002. The Diabetes National Service Framework and its subsequent Delivery Strategy set out the first ever set of national standards for the treatment of diabetes in order to raise the quality of NHS services and reduce unacceptable variations between them. In addition, although the National Service Framework for long-term conditions focuses on people with neurological conditions, much of the guidance it offers can apply to anyone living with a long term condition.

Further reading:

1. NHS Executive. *Clinical Effectiveness Indicators – A Consultation Document.* London: Department of Health, 1998.
2. Department of Health. *NHS Performance Indicators*. London: Department of Health, 2002.

3. Department of Health. *National service framework for diabetes: standards*. London: Department of Health, 2001.
4. Department of Health. *Improving Diabetes Services – The NSF Two Years On*. London: Department of Health, 2005.
5. Department of Health. *National Service Framework for Long-term Conditions*. London: Department of Health, 2005.
6. Lakhani A, Coles J, Eayres D, Spence C, Rachet B. Creative use of existing clinical and health outcomes data to assess NHS performance in England: Part 1—performance indicators closely linked to clinical care. *BMJ* 2005;330: 1426-31.

Updated: December 2010

Emergency readmissions to hospital within 28 days of discharge

Purpose:

To help monitor National Health Service (NHS) success in avoiding (or reducing to a minimum) readmission following discharge from hospital, when readmission was not part of the originally planned treatment. Previous analyses have shown wide variation between similar NHS organisations in emergency readmission rates. Not all emergency readmissions are likely to be part of the originally planned treatment and some may be potentially avoidable. The NHS may be helped to prevent potentially avoidable readmissions by seeing comparative figures and learning lessons from organisations with low readmission rates.

Definition of indicator and its variants:

Percentage of emergency admission to any hospital in England occurring within 28 days of the last, previous discharge from hospital after admission.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Indirectly age, sex, method of admission of discharge spell, diagnosis within medical specialties, procedure within surgical specialties standardised percent (standardised to 2004/05)	P F M	0-15 years	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County; LA (boundaries as at April 2009); PCO (boundaries as at October 2006); NHS provider Trusts (as during financial year); provider clusters; deprivation group (5, 7 bands)	FY 2008/09	FY 1999/00 FY 2000/01 FY 2001/02 FY 2002/03 FY 2003/04 FY 2004/05 FY 2005/06 FY 2006/07 FY 2007/08	03N_523ISP4EP_09_V1 03N_523ISP4EF_09_V1 03N_523ISP4EM_09_V1
Indirectly age, sex, method of admission of discharge spell, diagnosis within medical specialties, procedure within surgical specialties standardised percent (standardised to 2004/05)	P F M	16-74 years	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County; LA (boundaries as at April 2009); PCO (boundaries as at October 2006); NHS provider Trusts (as during financial year); provider clusters; deprivation group (5, 7 bands)	FY 2008/09	FY 1999/00 FY 2000/01 FY 2001/02 FY 2002/03 FY 2003/04 FY 2004/05 FY 2005/06 FY 2006/07 FY 2007/08	03N_523ISP4AP_09_V1 03N_523ISP4AF_09_V1 03N_523ISP4AM_09_V1
Indirectly age, sex, method of admission of discharge spell, diagnosis within medical specialties, procedure within surgical specialties standardised percent (standardised to 2004/05)	P F M	75+ years	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County; LA (boundaries as at April 2009); PCO (boundaries as at October 2006); NHS provider Trusts (as during financial year); provider clusters;	FY 2008/09	FY 1999/00 FY 2000/01 FY 2001/02 FY 2002/03 FY 2003/04 FY 2004/05 FY 2005/06 FY 2006/07 FY 2007/08	03N_523ISP4DP_09_V1 03N_523ISP4DF_09_V1 03N_523ISP4DM_09_V1

			deprivation group (5, 7 bands)			
Indirectly age, sex, method of admission of discharge spell, diagnosis within medical specialties, procedure within surgical specialties standardised percent (standardised to 2004/05)	P F M	16+ years	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County; LA (boundaries as at April 2009); PCO (boundaries as at October 2006); NHS provider Trusts (as during financial year); provider clusters; deprivation group (5, 7 bands)	FY 2008/09	FY 1999/00 FY 2000/01 FY 2001/02 FY 2002/03 FY 2003/04 FY 2004/05 FY 2005/06 FY 2006/07 FY 2007/08	03N_523ISP4ADP_09_V1 03N_523ISP4ADF_09_V1 03N_523ISP4ADM_09_V1

Numerator:

Numerator data - The number of finished and unfinished continuous inpatient (CIP) spells that are emergency admissions within 0-27 days (inclusive) of the last, previous discharge from hospital (see denominator), including those where the patient dies, but excluding the following: those with a main specialty upon readmission coded under obstetric or mental health specialties; and those where the readmitting spell has a diagnosis of cancer (other than benign or *in situ*) or chemotherapy for cancer coded anywhere in the spell.

The date of the last, previous discharge from hospital, and the date and method of admission from the following CIP spell, are used to determine the interval between discharge and emergency readmission.

The numerator is based on a pair of spells, the discharge spell and the next subsequent readmission spell (this spell must meet the numerator criteria). The selection process thus carries over the characteristics of the denominator for the discharge spell and applies additional ones to the readmission spell.

The following fields and values are used for the numerator.

> The numerator is the number of denominator CIP spells where:
> > Diagnosis of cancer is not coded in any position in the readmission spell;
> > AND the first episode in readmission CIP spell ADMIDATE minus last episode in admission CIP spell DISDATE < 27 days inclusive (discharge date and admission date, includes negatives);
> > AND the first episode in the readmission CIP spell has:
> > ADMIMETH = 21, 22, 23, 24 or 28 (admission method);
> > AND DIAG_01 does not begin with 'O' (primary diagnosis)
> > AND MAINSPEF not 700-715, 501, 560, 610 (main specialty).

> Fields used from the first episode in a spell where there is a valid organisation of residence code include:
> > SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADST field.
> Fields used from the last episode in a spell include:
> > PROCODETC (provider code, unmapped). Provider clusters are aggregates of the PROCODETC field.

> Counts are by:
> > age / sex / method of admission of discharge spell / diagnosis (ICD 10 chapter / selected sub-chapters within medical specialties) and procedure (OPCS 4 chapter / selected sub-chapters within surgical specialties) / organisation of residence in CIP spell (values for England are aggregates of these)

> where:
> > age bands for the respective age specific indicators are :<1, 1-4, 5-9, 10-15, 16-64, 65-74, 75-84, 85+; 16-64, 65-74, 75-84, 85+;
> > sex is 1, 2 (male and female);
> > admission method is elective or non-elective;
> > diagnosis (within medical specialties);
> > procedure (within surgical specialties).

Source of numerator data - Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year, plus those up to 28 days in the next financial year, England, The NHS Information Centre for health and social care.

Comments on numerator data - Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the Clinical and Health Outcomes Knowledge Base www.nchod.nhs.uk) for details). A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March.

The numerator (readmissions) consists of CIP spells (see denominator) that include both finished and unfinished (i.e. finished episodes from following years) episodes i.e. readmissions can be finished and unfinished CIP spells. Where there is more than one readmission within 28 days, each readmission is counted once, in relation to the previous discharge.

Readmissions that end in death are included in the numerator.

Patients within the mental health and maternity specialties as well as those with a diagnosis of cancer have been excluded because in these cases emergency readmission is often considered a necessary part of care.

Spells are attributed to the organisation of residence, based on the numerator.

The indicator includes discharges occurring after transfer to another Trust. Discharges are counted to the first valid organisation coded in the spell for residence based aggregates, and to the discharging trust for trust based aggregates.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details).

Denominator:

Denominator data - The number of finished CIP spells within selected medical and surgical specialties, with a discharge date up to March 31st within the year of analysis. Day cases, spells with a discharge coded as death, maternity spells (based on specialty, episode type, diagnosis), and those with mention of a diagnosis of cancer or chemotherapy for cancer anywhere in the spell are excluded. Patients with mention of a diagnosis of cancer or chemotherapy for cancer anywhere in the 365 days prior to admission are excluded. Mental health specialties are also excluded.

The following fields and values are used for the denominator.

> The first episode in the CIP spell has:
> > ADMIMETH = 11, 12, 13, 21, 22, 23, 24, 28, 31, 32, 81, 82, 83, 84 or 89 (admission method);
> > AND EPITYPE = 1 (episode type);
> > AND CLASSPAT = 1 (patient classification);
> > AND AGE = 0-15 or 7001-7007 (Ind.4E), 16-74 (Ind.4A), 75+ (Ind.4D);
> > AND DOB not 01/01/1900 or 01/01/1901 (date of birth);
> > AND SEX = 1 or 2 (sex);
> > AND EPIORDER = 1 (episode order);
> > AND EPISTART is valid (episode start date);
> > AND DIAG_01 does not begin with 'O' (primary diagnosis).

> AND the last episode in the CIP spell has:
> > DISDATE is valid and < 04/03/YYYY+1 (discharge date);
> > AND EPITYPE = 1 (episode type);
> > AND MAINSPEF not 700-715, 501, 560, 610 (main specialty);
> > AND DISMETH = 1, 2 or 3 (discharge method).

> Spells with any mention of a diagnosis of cancer (ICD-10 codes C00-C97, D37-D48) or chemotherapy for cancer (ICD-10 code Z51.1) are also excluded from the denominator, as are patients with mention of a diagnosis of cancer or chemotherapy for cancer anywhere in the 365 days prior to admission.

> Additionally, the following exclusions are applied (main specialty, first valid procedure and primary diagnosis):
> > AND (episode where the first valid procedure took place MAINSPEF = 100, 101, 110, 120, 130, 140, 141, 142, 143, 150, 160, 170, 180 or 502 AND first valid procedure is not NULL)
> > OR (first episode in CIP spell MAINSPEF = 100, 101, 110, 120, 130, 140, 141, 142, 143, 150, 160, 170, 180 or 502
> > OR (first episode in CIP spell MAINSPEF = 190, 191, 300, 301, 302, 303, 304, 305, 310, 311, 312, 313, 314, 315, 320, 330, 340, 350, 360, 361, 370, 371, 400, 401, 410, 420, 421, 430, 450, 460, 800, 810 or 823 and first episode in CIP spell DIAG_01 is not NULL)).

> There is an additional 3 step piece of logic which is designed to ensure that the spells are allocated to the most appropriate group for standardisation:

Step A) Look for spells where there is a valid procedure and surgical specialty (taken from the episode where the procedure was found).

Step B) Excluding spells selected in step A, select spells where main specialty in the first episode is surgical, these spells are standardised under the 'no procedures' basket.

Step C) Excluding those spells selected in step A and step B, select spells where main specialty of the first episode is medical.

Those spells selected in A) are standardised by procedure subgroup. Note that procedures beginning with 'Y' or 'Z' are standardised in the 'no procedure' basket. Those spells selected in C) are standardised by diagnosis subgroup.

Lists of specialties and sub-groups used for filtering/standardisation:

Specialties:

Medical Specialties: '190', '191', '300', '301', '302', '303', '304','305', '310', '311', '312', '313', '314', '315', '320', '330', '340', '350', '360', '361', '370', '371', '400', '401', '410', '420', '421', '430', '450', '460', '800', '810', '823'.

Surgical Specialties: '100', '101', '110', '120', '130', '140', '141', '142', '143', '150', '160', '170', '180', '502'

Details of the diagnosis / procedure groups and subgroups can be found on separate tabs within the output file for each indicator (see the table on page 1 of this specification for file names).

Fields used from the first episode in a spell where there is a valid organisation of residence code include:
SPELLRESPCTC, SPELLRESLADSTC., SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Fields used from the last episode in a spell include:
PROCODETC (provider code, unmapped). Provider clusters are aggregates of the PROCODETC field.

Counts are by:
age / sex / method of admission of discharge spell / diagnosis (ICD 10 chapter / selected sub-chapters within medical specialties) and procedure (OPCS 4 chapter / selected sub-chapters within surgical specialties) / organisation of residence in CIP spell (values for England are aggregates of these)

where:
age bands for the respective age specific indicators are: <1, 1-4, 5-9, 10-15,16-64, 65-74, 75-84, 85+; 16-64, 65-74, 75-84, 85+;
sex is 1, 2 (male and female);
admission method is elective or non-elective;
diagnosis (within medical specialties).

Source of denominator data - Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year, England, The NHS Information Centre for health and social care.

Comments on denominator data - There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). Quality of coding shows the proportion of diagnoses not coded. There may also be variation between hospitals in the way that they code diagnoses to the fourteen diagnosis fields in each episode, particularly primary diagnosis. For instance, they may code in the order in which the diagnoses were made, or according to their perceived importance or complexity. This may affect the group/subgroup within which a particular spell is selected for standardisation in this indicator. Similarly, there may be variation in which procedure is coded to the first position.

The denominator consists of CIP spells that cover all continuous, consultant episodes for the same patient, including those following a transfer to another hospital. Denominator CIP spells must start with an admission episode and finish with a (live) discharge episode in the year of analysis.

CIP spells with a discharge code of death are excluded from the denominator because readmission is not possible.

Statistical Methods:

The indicator is indirectly standardised by age, sex, method of admission and diagnosis / procedure. The person-based rate is standardised by using England age, sex, method of admission and diagnosis / procedure rates as standards. We defined the diagnosis and procedure groups for standardisation at ICD 10 / OPCS 4 coding chapter, sub-chapter or 3 digit level where the readmission rate was significantly different from that of the next higher level in two consecutive financial years and there were at least 50 discharges in each year. The gender specific rates are standardised using person based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and

the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age, sex, method of admission and diagnosis / procedure of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in rates from a previous year, plus the statistical significance of this change, have also been calculated. A positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator - This is a generic, cross-sectional annual comparative indicator of outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator - Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation, Local Authority and provider Trust level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence interval overlaps the national rate, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity - A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may contribute to the variation shown by the indicators. Differences in case-mix, severity of illness, comorbidities and other potential risk factors also contribute to the variation. The data available do not allow adjustment for any of these factors. This may pose less of a constraint at geographical organisation level than at hospital level. We have tried to deal with this constraint by presenting the data in clusters that are similar with respect to institution or organisation type. An attempt has also been made to take into account differences between organisations in the mix of diagnoses within medical specialties and procedures within surgical specialties. No attempt has been made to assess whether the readmission was linked to the discharge in terms of diagnosis. A patient discharged after an operation may be readmitted into a community hospital with a wound or chest infection. There are many different possibilities and over-specifying may lead to readmissions being missed. Gender-specific data standardised to person rates are available. Analyses at England level by the Index of Multiple Deprivation are presented.

Other potential confounding factors - A continuous inpatient spell may include transfers to other hospitals, e.g. for rehabilitation. The patterns of providing care may vary between NHS hospital trusts in terms of whether patients are transferred elsewhere before final discharge. Planned transfers, for example for rehabilitation, may affect discharge destination figures and readmission rates.

Variation between hospitals in average length of stay may lead to variation between hospitals in the proportion of complications occurring in hospital, as opposed to in the community after discharge from hospital. Readmissions may reflect self-discharge against medical advice, and levels of primary care and community resources available to manage care outside hospital. Readmissions may not be linked clinically to the previous spell and may be appropriate for the clinical care of the patient. There may be variation between Trusts in the way emergency admissions are coded. Routine data do not allow for all of these aspects to be identified and removed from the indicator, however, this may be done through local audit.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess the extent to which readmissions were linked to the previous episode, and therefore truly represent potentially avoidable adverse events, are recommended.

Relevant national initiatives:

Variants of this indicator have been used by the Department of Health in the NHS Performance Indicators, and by the Commission for Health Improvement and the Healthcare Commission in NHS Performance Ratings, in various combinations between 1999 and 2005.

Further reading:

1. Mason A, Goldacre M, Daly E. *Using Readmission Rates as a Health Outcome indicator – a Literature Review.* Report to the Department of Health. Oxford: National Centre for Health Outcomes Development, 2000.
2. Department of Health. *NHS Performance Indicators*. London: Department of Health, 2002.

3. Healthcare Commission. *2005 performance ratings: July 2005 website* http://ratings2005.healthcarecommission.org.uk/. London: Healthcare Commission, 2005.

Updated: November 2010

Years of life lost due to mortality from all causes

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from all causes (ICD-10 A00-Y99).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		03O_070CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		03O_070DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from all causes classified by underlying cause of death (ICD-10 A00-Y99), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. Twentieth Century Mortality Trends in England and Wales. *Office for National Statistics Health Statistics Quarterly*, No. 18, 2003: 5-17. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ18_revised_21Aug03.pdf
2. Brock A, Griffiths C. Trends in the mortality of young adults aged 15-44 in England and Wales, 1961-2001. *Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 22-31. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf

Updated: March 2011

Deaths at home from all causes

Purpose:

To improve palliative care and service planning for patients in the terminal stages of life, allowing more of them the choice of dying at home.

Definition of indicator and its variants:

The proportion of deaths from all causes (ICD-10 A00-Y99) that occur at home.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Percent of deaths at home and number of deaths at home	MFP	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		03P_200PC_09_V1
Indirectly age-standardised deaths at home rate per 100 deaths and number of deaths at home	MFP	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		03P_200ISR_09_V1

Numerator:

Numerator data - Deaths at home from all causes, classified by underlying cause of death (ICD-10 A00-Y99), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data – Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

Information about the place of death is found on the mortality record in the communal establishment field. It contains one of:

- a 5 digit code identifying a communal establishment or institution (e.g. hospital, nursing home, residential home);
- an "H" code which indicates that the person is certified as having died at their home address and that this is not a communal establishment or;
- an "E" code which indicates that the person died elsewhere.

The communal establishments are themselves classified into 84 categories (e.g. general hospital, mental nursing home, nursing home etc) and can be further distinguished by whether they are an NHS or Non-NHS establishment.

It is currently ONS practice to include nursing homes with hospitals under a broader group - "Other hospitals and communal establishments for the care of the sick" - and also to include residential homes under "Other communal establishments". This is because of concerns highlighted by the ONS regarding the accuracy of the recorded status of some communal establishments, particularly nursing homes and residential homes.

It is therefore not possible to include nursing home or residential home deaths as a "home" death. For this indicator, a "home" death is defined as one that has the "H" code in the communal establishment field, i.e. where the death has occurred at the home address and that address is not of a communal establishment.

Denominator:

Denominator data - All deaths from all causes, classified by underlying cause of death (ICD-10 A00-Y99), registered in the respective calendar year(s).

Source of denominator data - ONS.

Comments on denominator data - Includes deaths in all categories of communal establishment code, i.e. deaths in all communal establishments, at home, and elsewhere.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*. See Annex 2 for more details.

Statistical methods:

The age-standardised deaths at home rate utilises the indirect method of standardisation. The direct method was found not to be robust as it was affected by small numerator and denominator counts in specific age groups.

Indirect standardisation requires the computation of the ratio of an area's observed number of events to its expected number of events if it had experienced the standard age-specific rates. This age-standardised ratio can be converted into a rate by multiplying it by the crude rate of the standard population.

The standard rates used are those of England for the respective calendar year(s). Male and female rates have been standardised separately. The rate for persons is standardised for both age and sex.

This methodology is similar to that used for the Clinical Indicators and is described in detail in:

Annex 3: Explanations of statistical methods used in the *Compendium* (under the sections entitled "Indirectly Standardised Rates For Clinical Indicators" and "Confidence Intervals Of Indirectly Standardised Rates For Clinical Indicators").

Interpretation of indicators:

Type of Indicator - This is a generic cross-sectional comparative indicator reflecting events which act as a proxy for outcome (quality of dying). In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable areas.

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - 95%. Some of the values and factors influencing them may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of deaths may be small at individual organisational level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% probability, will contain the underlying value of the indicator. If the confidence interval for an organisation's rate is outside the range of the national confidence intervals, the difference between the two rates is considered statistically significant. If the confidence intervals for two rates overlap, in most cases the difference between the rates would not be considered statistically significant.

Effect of Case-Mix / severity – The specific cause of death, its acuteness of onset and its need for hospital care have implications for those who wish to die at home being able to do so. Variations in the proportion of deaths at home may be due to differences in the pattern of acute vs chronic deaths rather than differences in access to appropriate care The data available do not allow adjustment for these factors.

Other Potential Confounding Factors - A number of factors outside the control of the NHS such as personal choice, availability of hospices, and family/community support may contribute to the variation shown by the indicator.

Relevant National initiatives:

1. Department of Health. *End of life care strategy : Promoting high quality care for all adults at the end of life.* London: Department of Health , 2008.
   http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_086277
2. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service.* London: Department of Health, 2004.
3. Department of Health. *Pioneering Schemes Named Best of the Best. NHS Beacons – Part of a Concerted Campaign to Improve Cancer Services.* Department of Health, 1999. Press release: reference 1999/0375
4. Commission for Health Improvement. *NHS Cancer Care in England and Wales. National Service Framework Assessments No.1.* London: Commission for Health Improvement, 2001.

Further reading:

1. Higginson I.J, Thompson M. Children and young people who die from cancer: epidemiology and place of death in England (1995-9). *British Medical Journal* 2003; 327: 478-479.
2. Grande GE, Todd CJ, Barclay SIG, Farquhar MC. Does hospital at home for palliative care facilitate death at home? Randomised controlled trial. *British Medical Journal* 1999; 319: 1472-1475.
3. Higginson I.J, Jarman B, Astin P, Dolan S. Do social factors affect where patients die: an analysis of 10 years of cancer deaths in England. *Journal of Public Health Medicine* 1999; 21(1): 23-28.

Vaccination for measles, mumps and rubella

Purpose:

To help reduce the incidence of measles, mumps and rubella by increasing vaccination uptake.

Definition of indicator and its variants:

Proportion of children reaching their second birthday who were vaccinated against measles, mumps and rubella.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Percent	P	<2, <5	E, GOR, SHA, PCO	FY 2009/10		04A_080PCP1_10_V1 04A_080PCP2_10_V1

Numerator:

Numerator data - Children vaccinated against measles, mumps and rubella (by their second and fifth birthdays) in the respective financial year.

Source of numerator data - The NHS Information Centre for health and social care (IC).

Comments on numerator data - None.

Denominator:

Denominator data - Total number of children reaching their second and fifth birthdays in the respective financial year.

Source of denominator data - The NHS Information Centre for health and social care (IC).

Comments on denominator data - None.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Subsequent to the publication of the 2009/10 Immunisation Statistics by the NHS Information Centre, figures relating to Torbay Care Trust were reported by the Trust to be incorrect. Whooping cough and MMR coverage figures for Torbay Care Trust and MMR coverage for the South West SHA therefore differ from those published on the NHS IC website. Figures for the numbers of children aged 2 also differ to those published by the NHS IC for England, the South West SHA and Torbay Care Trust.

Further reading:

1. *NHS Immunisation Statistics, England: 2009-10*. Bulletin. The Information Centre, 2010. Available at: http://www.ic.nhs.uk/webfiles/publications/003_Health_Lifestyles/immstats0910/Immunisations_Bulletin_2009-10.pdf
2. *NHS Immunisation Statistics, England: 2008-09*. Bulletin. The Information Centre, 2009. Available at: http://www.ic.nhs.uk/webfiles/publications/immunisationstats0809/NHS_Immunisation_Statistics_England_2008_09_Bulletin.pdf
3. *NHS Immunisation Statistics, England: 2007-08*. Bulletin. The Information Centre, 2008. Available at: *http://www.ic.nhs.uk/webfiles/publications/immunisation2007to2008/Final%202007-08%20Imms%20Bulletin%20%28amended%29.pdf*
4. *NHS Immunisation Statistics, England: 2006-07*. Bulletin. The Information Centre, 2007. Available at: http://www.ic.nhs.uk/webfiles/publications/immstats2005to2006/Final%202006-07%20Immunisation%20Bulletin%20%28with%20copyright%29.pdf
5. *NHS Immunisation Statistics, England: 2005-06*. Bulletin 2006/17/HSCIC. The Information Centre, 2006. Available at: http://www.ic.nhs.uk/webfiles/publications/immstats2005to2006/ImmunisationStatistics280906_PDF.pdf
6. *NHS Immunisation Statistics, England: 2004-05*. Bulletin 2005/05/HSCIC. London: Health and Social Care Information Centre, 2005. Available at: http://www.dh.gov.uk/assetRoot/04/11/96/50/04119650.pdf

7. Government Statistical Service. *NHS Immunisation Statistics, England: 2003-04.* Bulletin 2004/16. London: Government Statistical Service, 2004. Available at: http://www.dh.gov.uk/assetRoot/04/09/95/77/04099577.pdf

8. Government Statistical Service. *NHS Immunisation Statistics, England: 2002-03.* Bulletin 2003/16. London: Government Statistical Service, 2003. Available at: http://www.dh.gov.uk/assetRoot/04/08/10/09/04081009.pdf

9. Government Statistical Service. *NHS Immunisation Statistics, England: 2001-02.* Bulletin 2002/18. London: Government Statistical Service, 2002. Available at: http://www.dh.gov.uk/assetRoot/04/02/31/98/04023198.pdf

Updated: June 2011

Vaccination for whooping cough

Purpose:

To help reduce the incidence of whooping cough by increasing vaccination uptake.

Definition of indicator and its variants:

Proportion of children reaching their first and fifths birthdays who were vaccinated against whooping cough.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Percent	P	<1, <5	E, GOR, SHA, PCO	FY 2009/10		04B_081PCP1_10_V1 04B_081PCP2_10_V1

Numerator:

Numerator data - Children vaccinated against whooping cough (by their first and fifth birthdays) in the respective financial year.

Source of numerator data - The NHS Information Centre for health and social care (IC).

Comments on numerator data - Whooping cough is no longer administered as a separate vaccination so the figures provided at 12 month cohort are the diphtheria, tetanus, polio, pertussis and Hib '5-in1' vaccination (DTaP/IPV/Hib) which includes whooping cough as part of the vaccination.

Denominator:

Denominator data - Total number of children reaching their first and fifth birthdays in the respective financial year.

Source of denominator data - The NHS Information Centre for health and social care (IC).

Comments on denominator data - None.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Subsequent to the publication of the 2009/10 Immunisation Statistics by the NHS Information Centre, figures relating to Torbay Care Trust were reported by the Trust to be incorrect. Whooping cough and MMR coverage figures for Torbay Care Trust and MMR coverage for the South West SHA therefore differ from those published on the NHS IC website. Figures for the numbers of children aged 2 also differ to those published by the NHS IC for England, the South West SHA and Torbay Care Trust.

Further reading:

1. *NHS Immunisation Statistics, England: 2009-10*. Bulletin. The Information Centre, 2010. Available at: http://www.ic.nhs.uk/webfiles/publications/003_Health_Lifestyles/immstats0910/Immunisations_Bulletin_2009-10.pdf
2. http://www.ic.nhs.uk/webfiles/publications/immunisationstats0809/NHS_Immunisation_Statistics_England_2008_09_Bulletin.pdf
3. *NHS Immunisation Statistics, England: 2008-09*. Bulletin. The Information Centre, 2009. Available at: http://www.ic.nhs.uk/webfiles/publications/immunisationstats0809/NHS_Immunisation_Statistics_England_2008_09_Bulletin.pdf
4. *NHS Immunisation Statistics, England 2007-08*. Bulletin. The Information Centre, 2008. Available at: *http://www.ic.nhs.uk/webfiles/publications/immunisation2007to2008/Final%202007-08%20Imms%20Bulletin%20%28amended%29.pdf*
5. *NHS Immunisation Statistics, England: 2006-07*. Bulletin. The Information Centre, 2006. Available at: http://www.ic.nhs.uk/webfiles/publications/immstats2005to2006/Final%202006-07%20Immunisation%20Bulletin%20%28with%20copyright%29.pdf
6. *NHS Immunisation Statistics, England: 2005-06*. Bulletin 2006/17/HSCIC. The Information Centre, 2006. Available at: http://www.ic.nhs.uk/webfiles/publications/immstats2005to2006/ImmunisationStatistics280906_PDF.pdf

7. *NHS Immunisation Statistics, England: 2004-05*. Bulletin 2005/05/HSCIC. London: Health and Social Care Information Centre, 2005. Available at: http://www.dh.gov.uk/assetRoot/04/11/96/50/04119650.pdf
8. Government Statistical Service. *NHS Immunisation Statistics, England: 2003-04.* Bulletin 2004/16. London: Government Statistical Service, 2004. Available at: http://www.dh.gov.uk/assetRoot/04/09/95/77/04099577.pdf
9. Government Statistical Service. *NHS Immunisation Statistics, England: 2002-03.* Bulletin 2003/16. London: Government Statistical Service, 2003. Available at: http://www.dh.gov.uk/assetRoot/04/08/10/09/04081009.pdf
10. Government Statistical Service. *NHS Immunisation Statistics, England: 2001-02.* Bulletin 2002/18. London: Government Statistical Service, 2002. Available at: http://www.dh.gov.uk/assetRoot/04/02/31/98/04023198.pdf
11. World Health Organization. *Pertussis vaccine.* Geneva: World Health Organization. Available at: http://www.who.int/vaccines/en/pertussis.shtml

Updated: June 2011

Incidence of measles

Purpose:

To help reduce the incidence of measles.

Definition of indicator and its variants:

Notifications of measles.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of notifications	P	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		04C_086NO_09_V1
Notification rate per 100,000 and number of notifications	P	<1	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2006-09		04C_086CR_09_V1
Directly age-standardised notification rate per 100,000 and number of notifications	P	<15	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2006-09		04C_086DR_09_V1

Numerator:

Numerator data - Notifications of measles in the respective calendar year(s).

Source of numerator data - Health Protection Agency, Communicable Disease Surveillance Centre.

Comments on numerator data - Measles is notifiable under the Public Health Acts and Infectious Disease Regulations. Detailed statistics and a description of the reporting system are published annually by the Office for National Statistics (Series MB2).

The epidemic nature of measles results in a variation in incidence from year to year, irrespective of vaccination levels, until coverage is extremely high. An indicator that shows wide variations on a year to year basis can be difficult to interpret. As there are marked annual variations in notifications of measles, a four-year average is used for the notification rates.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar year(s).

Source of denominator data – Office for National Statistics (ONS).

Comments on denominator data - The population figures used are ONS mid-year estimates for 2006-09 derived from the 2001 Census with allowance for subsequent births, deaths, migration, and ageing of the population.

Statistical methods:

Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Health Protection Agency. *General information: MMR*, London 2010: Available at: http://www.hpa.org.uk/servlet/Satellite?c=Page&childpagename=HPAweb%2FPage%2FHPAwebAutoListNam e&cid=1153999752025&p=1153999752025&pagename=HPAwebWrapper&searchmode=simple&searchterm =MMR

2. Health Protection Agency. *Guidelines on the management of communicable diseases.* Available at: http://www.hpa.org.uk/servlet/Satellite?c=Page&childpagename=HPAweb%2FPage%2FHPAwebAutoListName&cid=1153999752025&p=1153999752025&pagename=HPAwebWrapper&searchmode=simple&searchterm=Guidelines+on+the+management+of+communicable+&go=Search
3. World Health Organization. *Strategic Plan for measles and congenital rubella infection in the European Regions of World Health Organization.* Copenhagen: World Health Organization, 2003. Available at: http://search.who.int/search?q=Strategic+Plan+for+measles+and+congenital+rubella+&WHOSearchSubmit=Search&site=euro&client=euro&proxystylesheet=euro&output=xml_no_dtd
4. Gay N. et al. *The epidemiology of measles in England and Wales since the 1994 vaccination campaign.* London: Communicable Disease Review, Communicable Disease Surveillance Centre, 1997.

Updated: June 2011

Incidence of whooping cough

Purpose:

To help reduce the incidence of whooping cough.

Definition of indicator and its variants:

Notifications of whooping cough.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of notifications	P	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		04D_089NO_09_01
Notification rate per 100,000 and number of notifications	P	<1	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2006-09		04D_089CR_09_V1
Directly age-standardised notification rate per 100,000 and number of notifications	P	<15	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	200609		04D_089DR_09_V1

Numerator:

Numerator data - Notifications of whooping cough in the respective calendar year(s).

Source of numerator data - Health Protection Agency, Communicable Disease Surveillance Centre.

Comments on numerator data - Whooping cough is notifiable under the Public Health Acts and Infectious Disease Regulations. Detailed statistics and a description of the reporting system are published annually by the Office for National Statistics (Series MB2).

The epidemic nature of whooping cough results in a variation in incidence from year to year, irrespective of vaccination levels, until coverage is extremely high. An indicator that shows wide variations on a year to year basis can be difficult to interpret. As there are marked annual variations in notifications of whooping cough, a four-year average is used for the notification rates.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar year(s).

Source of denominator data – Office for National Statistics (ONS).

Comments on denominator data - The population figures used are ONS mid-year estimates for 2006-09 derived from the 2001 Census with allowance for subsequent births, deaths, migration, and ageing of the population.

Statistical methods:

Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Health Protection Agency. General information: whooping cough. 2010 Available at: http://www.hpa.org.uk/servlet/Satellite?c=Page&childpagename=HPAweb%2FPage%2FHPAwebAutoListName&cid=1153999752025&p=1153999752025&pagename=HPAwebWrapper&searchmode=simple&searchterm=pertussis

2. Health Protection Agency. *Guidelines on the management of communicable diseases.* Available at: http://www.hpa.org.uk/servlet/Satellite?c=Page&childpagename=HPAweb%2FPage%2FHPAwebAutoListName&cid=1153999752025&p=1153999752025&pagename=HPAwebWrapper&searchmode=simple&searchterm=Guidelines+on+the+management+of+communicable+&go=Search

3. Devine MJ, Bellis MA, Tocque SQ. Whooping cough surveillance in the north west of England. *Communicable Disease and Public Health*, 1998; 1: 121-5.

Updated: June 2011

Incidence of all central nervous system anomalies

Purpose:

To help reduce the incidence of all central nervous system anomalies.

Definition of indicator and its variants:

Notifications of live and still born babies with central nervous system anomalies.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of notifications and notification rate per 10,000 total births	P	0	E&W, E, GOR	2008 2006-08		04E_082CRP1_08_V1 04E_082CRP2_08_V1

Numerator:

Numerator data - Notifications of live and still born babies with central nervous system anomalies in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Although the ONS scheme is primarily for monitoring changes in the frequency of reporting anomalies, it also provides the most extensive data on incidence and prevalence levels available in England and Wales. However, the major disadvantage of using the monitoring scheme data to measure incidence and prevalence levels arises from the deficiencies in its coverage, in that the notification scheme is voluntary. In the period up to January 1990, only anomalies detected within seven days of birth were included, later extended to ten days. From 1st January 1995, anomalies detected at any age can be reported.

The numerator data relate to the National Congenital Anomaly System (NCAS). ONS receives these data from two sources: electronically from local congenital anomaly registers for the areas covered by a register, and on paper SD56 forms directly from NHS Trusts in areas without a local register. It is recocognised that there is under-reporting in NCAS, particularly in the areas not covered by a local registers.

In April 2006 several PCTs in East Midlands and Yorkshire and The Humber decided to withold funding from their local congenital anomaly register, the East Midlands and South Yorkshire Congenital Anomaly Register. Without funding the register was unable to process or send data to ONS. Figures for England, and England and Wales exclude data from these areas.

As of 1995, congenital anomalies are coded on the basis of ICD-10. Detailed statistics and a description of the monitoring scheme are published annually by ONS (Series MB3).

Denominator:

Denominator data - Live and still births occurring in the respective calendar year(s).

Source of denominator data - ONS.

Comments on denominator data - Until October 1992, stillbirths were legally defined as fetal deaths occurring after 28 weeks of gestation. In October 1992 the definition was revised to include fetal deaths occurring after 24 weeks of gestation. The data presented here are based on the revised definition, and hence are not comparable with data for years before 1993.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. Congenital anomaly notifications 2008. *Statistical Bulletin*, *March 2010*. Available at: http://www.statistics.gov.uk/pdfdir/cong0310.pdf

Updated: August 2010

Incidence of anencephalus

Purpose:

To help reduce the incidence of anencephalus.

Definition of indicator and its variants:

Notifications of live and still born babies with anencephalus.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of notifications and notification rate per 10,000 total births	P	0	E&W	2008 2006-08		04F_083CRP1_08_V1 04F_083CRP2_08_V1

Numerator:

Numerator data - Notifications of live and still born babies with anencephalus in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Although the ONS scheme is primarily for monitoring changes in the frequency of reporting anomalies, it also provides the most extensive data on incidence and prevalence levels available in England and Wales. However, the major disadvantage of using the monitoring scheme data to measure incidence and prevalence levels arises from the deficiencies in its coverage, in that the notification scheme is voluntary. In the period up to January 1990, only anomalies detected within seven days of birth were included, later extended to ten days. From 1st January 1995, anomalies detected at any age can be reported.

The numerator data relate to the National Congenital Anomaly System (NCAS). ONS receives these data from two sources: electronically from local congenital anomaly registers for the areas covered by a register, and on paper SD56 forms directly from NHS Trusts in areas without a local register. It is recocognised that there is under-reporting in NCAS, particularly in the areas not covered by a local registers.

In April 2006 several PCTs in East Midlands and Yorkshire and The Humber decided to withold funding from their local congenital anomaly register, the East Midlands and South Yorkshire Congenital Anomaly Register. Without funding the register was unable to process or send data to ONS. Figures for England, and England and Wales exclude data from these areas.

As of 1995, congenital anomalies are coded on the basis of ICD-10. Detailed statistics and a description of the monitoring scheme are published annually by ONS (Series MB3).

Denominator:

Denominator data - Live and still births occurring in the respective calendar year(s).

Source of denominator data - ONS.

Comments on denominator data - Until October 1992, stillbirths were legally defined as fetal deaths occurring after 28 weeks of gestation. In October 1992 the definition was revised to include fetal deaths occurring after 24 weeks of gestation. The data presented here are based on the revised definition, and hence are not comparable with data for years before 1993.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. Congenital anomaly notifications 2008. *Statistical Bulletin*, *March 2010*. Available at: http://www.statistics.gov.uk/pdfdir/cong0310.pdf

Updated: August 2010

Incidence of spina bifida

Purpose:

To help reduce the incidence of spina bifida.

Definition of indicator and its variants:

Notifications of live and still born babies with spina bifida.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of notifications and notification rate per 10,000 total births	P	0	E&W E&W	2008 2006-08		04G_087CRP1_08_V1 04G_087CRP2_08_V1

Numerator:

Numerator data - Notifications of live and still born babies with spina bifida in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Although the ONS scheme is primarily for monitoring changes in the frequency of reporting anomalies, it also provides the most extensive data on incidence and prevalence levels available in England and Wales. However, the major disadvantage of using the monitoring scheme data to measure incidence and prevalence levels arises from the deficiencies in its coverage, in that the notification scheme is voluntary. In the period up to January 1990, only anomalies detected within seven days of birth were included, later extended to ten days. From 1st January 1995, anomalies detected at any age can be reported.

The numerator data relate to the National Congenital Anomaly System (NCAS). ONS receives these data from two sources: electronically from local congenital anomaly registers for the areas covered by a register, and on paper SD56 forms directly from NHS Trusts in areas without a local register. It is recocognised that there is under-reporting in NCAS, particularly in the areas not covered by a local registers.

In April 2006 several PCTs in East Midlands and Yorkshire and The Humber decided to withold funding from their local congenital anomaly register, the East Midlands and South Yorkshire Congenital Anomaly Register. Without funding the register was unable to process or send data to ONS. Figures for England, and England and Wales exclude data from these areas.

As of 1995, congenital anomalies are coded on the basis of ICD-10. Detailed statistics and a description of the monitoring scheme are published annually by ONS (Series MB3).

Denominator:

Denominator data - Live and still births in the respective calendar year(s).

Source of denominator data - ONS.

Comments on denominator data - Until October 1992, stillbirths were legally defined as fetal deaths occurring after 28 weeks of gestation. In October 1992 the definition was revised to include fetal deaths occurring after 24 weeks of gestation. The data presented here are based on the revised definition, and hence are not comparable with data for years before 1993

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. Congenital anomaly notifications 2008. *Statistical Bulletin*, *March 2010*. Available at: http://www.statistics.gov.uk/pdfdir/cong0310.pdf

Updated: August 2010

Incidence of Down syndrome

Purpose:

To help reduce the incidence of Down syndrome, subject to parental choice.

Definition of indicator and its variants:

Notifications of live and still born babies with Down syndrome.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of notifications and notification rate per 10,000 total births: ONS	P	0	E&W, E, GOR	2008 2006-08		04H_085CRP1_08_V1 04H_085CRP2_08_V1
Number of notifications and notification rate per 10,000 total births; percent of cases diagnosed prenatally by maternal age; and percent of diagnosed cases in which pregnancy was terminated by maternal age: NDSCR	P	0	E&W, E, GOR, SHA	2006-08		04H_085CRP3_08_V1 04H_085CRP4_08_V1 04H_085CRP5_08_V1

Numerator:

Numerator data - Notifications of live and still born babies with Down syndrome in the respective calendar year(s).

Source of numerator data -
(i) Office for National Statistics (ONS);
(ii) National Down Syndrome Cytogenetic Register (NDSCR).

Comments on numerator data -
(i) ONS data: Although the ONS scheme is primarily for monitoring changes in the frequency of reporting anomalies, it also provides the most extensive data on incidence and prevalence levels available in England and Wales. However, the major disadvantage of using the monitoring scheme data to measure incidence and prevalence levels arises from the deficiencies in its coverage, in that the notification scheme is voluntary. In the period up to January 1990, only anomalies detected within seven days of birth were included, later extended to ten days. From 1st January 1995, anomalies detected at any age can be reported.

The numerator data relate to the National Congenital Anomaly System (NCAS). ONS receives these data from two sources: electronically from local congenital anomaly registers for the areas covered by a register, and on paper SD56 forms directly from NHS Trusts in areas without a local register. It is recocognised that there is under-reporting in NCAS, particularly in the areas not covered by a local registers.

In April 2006 several PCTs in East Midlands and Yorkshire and The Humber decided to withold funding from their local congenital anomaly register, the East Midlands and South Yorkshire Congenital Anomaly Register. Without funding the register was unable to process or send data to ONS. Figures for England, and England and Wales exclude data from these areas.

As of 1995, congenital anomalies are coded on the basis of ICD-10. Detailed statistics and a description of the monitoring scheme are published annually by ONS (Series MB3).

(ii) NDSCR data: The National Down Syndrome Cytogenetic Register provides a more complete estimate of the incidence of Down syndrome than does the Office for National Statistics' voluntary notification system. It also provides information on diagnoses and outcomes.

Since 1989, all clinical cytogenetic laboratories dealing with constitutive disorders (congenital karyotype anomalies) have notified the NDSCR of all diagnoses of trisomy 21 and related karyotypes. From a comparison of the two systems, it seems that the ONS data is 46% under-reported for the years 1990-93 on terminations and 48% on births (See "Further reading"). Data from the NDSCR are constantly being updated, hence there could be minor differences year on year. Trends in prenatal screening for and diagnosis of Down syndrome in England and Wales are reported elsewhere (See "Further reading"). Despite the expansion of prenatal screening and diagnosis, 39% of all diagnoses were at birth in 2001 compared with 44% in 1999. Of all pregnancies with a prenatal diagnosis of trisomy 21 in 1996-99, 94% were terminated, 5% were liveborn, and 1% were stillbirths or neonatal deaths.

Denominator:

Denominator data - Live and still births occurring in the respective calendar year(s).

Source of denominator data - ONS.

Comments on denominator data - Until October 1992, stillbirths were legally defined as fetal deaths occurring after 28 weeks of gestation. In October 1992, the definition was revised to include fetal deaths occurring after 24 weeks of gestation. The data presented here are based on the revised definition, and hence are not comparable with data for years before 1993.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. Congenital anomaly notifications 2008. *Statistical Bulletin*, *March 2010*. Available at: http://www.statistics.gov.uk/pdfdir/cong0310.pdf
2. The National Down Syndrome Cytogenetic Register. *2005 Annual Report*, February 2007. Available at: http://www.wolfson.qmul.ac.uk/ndscr/AP2005v7.pdf
3. The National Down Syndrome Cytogenetic Register. *2004 Annual Report*, December 2005. Available at: http://www.wolfson.qmul.ac.uk/ndscr/AP%202004.pdf
4. Mutton D, Ide RG, Alberman E. Trends in prenatal screening for and diagnosis of Down's syndrome: England and Wales, 1989-97. *British Medical Journal* 1998; 317: 922-3.
5. Huang T, Watt HC, Wald NJ, Morris JK, Mutton DE, Alberman ED. Reliability of statistics on Down's syndrome notifications. *Journal of Medical Screening*, 1997; 4, 95-97.

Updated: August 2010

Incidence of cleft palate and/or cleft lip

Purpose:

To help reduce the incidence of cleft palate and/or cleft lip.

Definition of indicator and its variants:

Notifications of live and still born babies with cleft palate and/or cleft lip.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of notifications and notification rate per 10,000 total births	P	0	E&W, E, GOR	2008 2006-08		04I_084CRP1_08_V1 04I_084CRP2_08_V1

Numerator:

Numerator data - Notifications of live and still born babies with cleft palate and/or cleft lip in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Although the ONS scheme is primarily for monitoring changes in the frequency of reporting anomalies, it also provides the most extensive data on incidence and prevalence levels available in England and Wales. However, the major disadvantage of using the monitoring scheme data to measure incidence and prevalence levels arises from the deficiencies in its coverage, in that the notification scheme is voluntary. In the period up to January 1990, only anomalies detected within seven days of birth were included, later extended to ten days. From 1st January 1995, anomalies detected at any age can be reported.

The numerator data relate to the National Congenital Anomaly System (NCAS). ONS receives these data from two sources: electronically from local congenital anomaly registers for the areas covered by a register, and on paper SD56 forms directly from NHS Trusts in areas without a local register. It is recocognised that there is under-reporting in NCAS, particularly in the areas not covered by a local registers.

In April 2006 several PCTs in East Midlands and Yorkshire and The Humber decided to withold funding from their local congenital anomaly register, the East Midlands and South Yorkshire Congenital Anomaly Register. Without funding the register was unable to process or send data to ONS. Figures for England, and England and Wales exclude data from these areas.

As of 1995, congenital anomalies are coded on the basis of ICD-10. Detailed statistics and a description of the monitoring scheme are published annually by ONS (Series MB3).

Denominator:

Denominator data - Live and still births in the respective calendar year(s).

Source of denominator data - ONS.

Comments on denominator data - Until October 1992, stillbirths were legally defined as fetal deaths occurring after 28 weeks of gestation. In October 1992 the definition was revised to include fetal deaths occurring after 24 weeks of gestation. The data presented here are based on the revised definition, and hence are not comparable with data for years before 1993.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. Congenital anomaly notifications 2008. *Statistical Bulletin*, *March 2010*. Available at: http://www.statistics.gov.uk/pdfdir/cong0310.pdf

Updated: August 2010

Low birthweight births

Purpose:

To help reduce the incidence of low birthweight births.

Definition of indicator and its variants:

Live and stillborn infants with low birthweights as a percent of all live and stillborn infants with a stated birthweight.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Percent of births under 1500 and under 2500 grams	P	0	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		04J_090PC_09_V1

Numerator:

Numerator data - Number of live and still births occurring in the respective calendar year with birthweights under 1500 grams and under 2500 grams for:
- all maternal ages;
- maternal ages under 20 years and 20 and over (plus live and still births by 500 gram intervals).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data - See "Comments on denominator" data.

Denominator:

Denominator data - All live and still births occurring with a stated birthweight in the respective calendar year for respective maternal ages.

Source of denominator data - ONS.

Comments on denominator data - Until October 1992, stillbirths were legally defined as fetal deaths occurring after 28 weeks of gestation. In October 1992 the definition was revised to include fetal deaths occurring after 24 weeks of gestation. The data presented here are based on the revised definition, and hence are not comparable with data for years before 1993.

Birthweight is obtained from the birth notification information provided to the registrar of births and deaths by the local health services. Birthweight is not always stated in the notifications.

The figures presented here are expressed as percentages of total births with a stated birthweight, thereby excluding births without a stated birthweight from the denominator. These figures are therefore not comparable with data for years before 1994, which were expressed as percentages of total births. In England and Wales in 2008, birthweight was not stated for 0.8% of total births and in 2009 for 0.7%.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. *Statistical Bulletin - Infant and perinatal mortality by health areas in England and Wales, 2009*. Available at: http://www.statistics.gov.uk/pdfdir/ipm0910.pdf
2. Office for National Statistics. *Statistical Bulletin - Infant and perinatal mortality 2008: health areas, England and Wales.* September 2009. Available at: http://www.statistics.gov.uk/pdfdir/ipm0909.pdf
3. Department of Health. *National Service Framework for Children, Young People and Maternity Services – Emerging findings*. London: Department of Health, 2003.
4. Department of Health. *National Service Framework for Children, Young People and Maternity Services – Standard for Hospital Services*. London: Department of Health, 2003.

Updated: March 2011

Stillbirths

Purpose:

To help reduce the incidence of stillbirths.

Definition of indicator and its variants:

Stillbirths, defined as fetal deaths occurring after 24 weeks' gestation or more.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of live births by maternal age	F	11-15, 16-19, 20-24, 25-34, 35-39, 40+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		04K_097NO_09_V1
Number of stillbirths and stillbirth rate per 1000 total (live and still) births	P	0	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009 2007-09		04K_097CRP1_09_V1 04K_097CRP2_09_V1

Numerator:

Numerator data - Number of stillbirths for all maternal ages, and for ages under 20 years and 20 years and over occurring in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data - Until October 1992, stillbirths were legally defined as fetal deaths occurring after 28 weeks of gestation. In October 1992 the definition was revised to include fetal deaths occurring after 24 weeks of gestation. The data presented here are based on the revised definition, and hence are not comparable with data for years before 1993.

Denominator:

Denominator data - Live and stillbirths occurring in the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - See "Comments on numerator data".

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. *Statistical Bulletin - Births and deaths in England and Wales, 2009.* November 2010. Available at: http://www.statistics.gov.uk/pdfdir/bdths0710.pdf
2. Office for National Statistics. *Statistical Bulletin - Infant and perinatal mortality by health areas in England and Wales, 2009*. Available at: http://www.statistics.gov.uk/pdfdir/ipm0910.pdf
3. Office for National Statistics. *Statistical Bulletin - Infant and perinatal mortality 2008: health areas, England and Wales.* September 2009. Available at: http://www.statistics.gov.uk/pdfdir/ipm0909.pdf
4. Department of Health. *National Service Framework for Children, Young People and Maternity Services – Emerging findings*. London: Department of Health, 2003.
5. Department of Health. *National Service Framework for Children, Young People and Maternity Services – Standard for Hospital Services*. London: Department of Health, 2003.

Updated: March 2011

Perinatal mortality

Purpose:

To help reduce perinatal mortality.

Definition of indicator and its variants:

Stillbirths plus early neonatal deaths (deaths at under 7 completed days of life).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of perinatal deaths and perinatal mortality rate per 1000 total (live and still) births	P	Stillbirths and deaths <7 days	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009 2007-09 2004 2003-05 2004-06		04L_179CRP1_09_V1 04L_179CRP2_09_V1 04L_179CRP1_04_V3 04L_179CRP2_05_V5 04L_179CRP2_06_V2

Numerator:

Numerator data - Number of stillbirths and deaths of infants at ages under 7 days registered in the relevant year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Until October 1992, stillbirths were legally defined as fetal deaths occurring after 28 weeks of gestation. In October 1992 the definition was revised to include fetal deaths occurring after 24 weeks of gestation. The data presented here are based on the revised definition, and hence are not comparable with data for years before 1993.

The latest version includes data with revisions for year 2004 made by the ONS and published in October 2006.

Denominator:

Denominator data - Live and still births occurring in the respective calendar year(s).

Source of denominator data - ONS.

Comments on denominator data - See "Comments on numerator data".

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. *Statistical Bulletin - Infant and perinatal mortality by health areas in England and Wales, 2009*. Available at: http://www.statistics.gov.uk/pdfdir/ipm0910.pdf
2. Office for National Statistics. *Statistical Bulletin - Infant and perinatal mortality 2008: health areas, England and Wales.* September 2009. Available at: http://www.statistics.gov.uk/pdfdir/ipm0909.pdf
3. Department of Health. *National Service Framework for Children, Young People and Maternity Services – Emerging findings*. London: Department of Health, 2003.
4. Department of Health. *National Service Framework for Children, Young People and Maternity Services – Standard for Hospital Services*. London: Department of Health, 2003.

Updated: June 2011

Postneonatal mortality

Purpose:

To help reduce postneonatal mortality.

Definition of indicator and its variants:

Deaths of infants at ages 28 days and over but under one year.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of postneonatal deaths and postneonatal mortality rate per 1000 live births	P	28 days to 1 year	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009 2007-09		04M_180CRP1_09_V1 04M_180CRP2_09_V1

Numerator:

Numerator data - Number of deaths of infants at ages 28 days to 1 year registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - None.

Denominator:

Denominator data - Live births occurring in the respective calendar year(s).

Source of denominator data - ONS.

Comments on denominator data - None.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. *Statistical Bulletin - Infant and perinatal mortality by health areas in England and Wales, 2009*. Available at: http://www.statistics.gov.uk/pdfdir/ipm0910.pdf
2. Office for National Statistics. *Statistical Bulletin - Infant and perinatal mortality 2008: health areas, England and Wales.* September 2009. Available at: http://www.statistics.gov.uk/pdfdir/ipm0909.pdf
3. Department of Health. *National Service Framework for Children, Young People and Maternity Services – Emerging findings*. London: Department of Health, 2003.
4. Department of Health. *National Service Framework for Children, Young People and Maternity Services – Standard for Hospital Services*. London: Department of Health, 2003.

Updated: March 2011

Mortality in infancy

Purpose:

To help reduce mortality in infancy.

Definition of indicator and its variants:

Deaths of infants at various ages under one year.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of infant deaths and infant mortality rate per 1000 live births	P	<1 year, <28 days, <7 days	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009 2007-09		04N_181CRP1_09_V1 04N_181CRP2_09_V1

Numerator:

Numerator data - Number of deaths of infants at various ages (<1 year, <28 days, <7 days), for all maternal ages and for maternal ages under 20 years and 20 years and over, registered in the respective calendar years(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Data on infant deaths by maternal age were extracted from "linked files", where death records are linked to corresponding birth records. A small proportion of records were not linked successfully (e.g. the child may have been born in another country), hence totals may vary from published figures slightly.

Denominator:

Denominator data - Live births occurring in the respective calendar year(s) for respective maternal ages.

Source of denominator data - ONS.

Comments on denominator data - None.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. *Statistical Bulletin - Infant and perinatal mortality by health areas in England and Wales, 2009*. Available at: http://www.statistics.gov.uk/pdfdir/ipm0910.pdf
2. Office for National Statistics. *Statistical Bulletin - Infant and perinatal mortality 2008: health areas, England and Wales.* September 2009. Available at: http://www.statistics.gov.uk/pdfdir/ipm0909.pdf
3. Department of Health. *National Service Framework for Children, Young People and Maternity Services – Emerging findings*. London: Department of Health, 2003.
4. Department of Health. *National Service Framework for Children, Young People and Maternity Services – Standard for Hospital Services*. London: Department of Health, 2003.

Updated: March 2011

Hospital procedures: orchidopexy

Purpose:

The purpose of the indicators is to help monitor the frequency and timeliness of surgery for undescended testes (orchidopexy) in boys under 15. Undescended testes are associated with potential complications in later life such as infertility and malignancy. Timely correction (such as surgery before the age of 5) acts as a proxy for both timely detection through early childhood screening, and potential prevention of later complications.

Definition of indicator and its variants:

(i) Admission to hospital of boys where an orchidopexy is undertaken
(ii) Orchidopexies on boys aged 5-14 years as a percentage of all orchidopexies on boys under 15 years of age

Statistic	Sex	Age group	Organisation	Period		File-worksheet Name
			(see glossary)	Current data	Trend data	
(i) Indirectly age - standardised rate per 100,000 (standardised to 2005/06)	M	<5, 5-14	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County; LA (boundaries as at April 2009); PCO (boundaries as at October 2006).	FY 2008/09	FY 2002/03 FY 2003/04 FY 2004/05 FY 2005/06 FY 2006/07 FY 2007/08	04O_095ISR7NP1_09_V1 04O_095ISR7NP2_09_V1
(ii) Indirectly age - standardised percentage (standardised to 2005/06)	M	0-14	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County; LA (boundaries as at April 2009); PCO (boundaries as at October 2006).	FY 2008/09	FY 2002/03 FY 2003/04 FY 2004/05 FY 2005/06 FY 2006/07 FY 2007/08	04O_095ISP7N_09_V1

Numerator:

Numerator data for (i) - The number of finished and unfinished continuous inpatient (CIP) spells for patients of ages either <5 or 5-14 with one of the following procedures (OPCS-4 codes N08 & N09) anywhere in the spell, in the respective financial year:

Orchidopexy
- N08   Bilateral placement of testes in scrotum
- N09   Other placement of testes in scrotum

The following fields and values are used for the numerator:

Any episode in the CIP spell has:
    A valid procedure from the above list in any operation position (OPER_NN)
AND the first episode in the CIP spell has:
    ADMISORC not = 51, 52 or 53 (admission source);
    AND EPITYPE = 1 (episode type);
    AND SEX = 1 (sex);
    AND EPIORDER = 1 (epiorder);
    AND ADMIMETH = 11,12,13,21,22,23,24,28,31,32,81,82,83,84 or 89 (admission method);
    AND EPISTART >= 01/04/YYYY and EPISTART <= 31/03/YYYY+1 (episode start date within year);
    AND CLASSPAT = 1 or 2 (patient classification);
    AND STARTAGE is either 0-4 or 7001-7007; or 5-14 (age at start of episode, two variants of indicator);
    AND DOB not 01/01/1900 or 01/01/1901 (date of birth).

Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:

SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Counts are by:
age / first valid organisation of residence in CIP spell (values for England are aggregates of these)

where:
age bands are either <1, 1-4 or 5-9,10-14 (two variants of indicator);

Numerator data for (ii) - The numerator is the same as the numerator in (i), for ages 5-14.

Source of numerator data - Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year. England, The NHS Information Centre for health and social care.

Comments on numerator data – This indicator monitors patients rather than the number of operations. Each person having a procedure should only be counted once during each admission. This is done by counting CIP spells (epiorder 1) only. Some transfers, which are also coded epiorder 1 could lead to double counting. In order to avoid this, spells which have an ADMISORC of 51-53, indicating a transfer from another NHS Trust, are excluded.

Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March. In order to avoid double counting that spell in both financial years, only spells where the selected procedure took place during the financial year of analysis are counted.

Spells are attributed to the organisation of residence, based on the numerator.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details).

Individual spells may contain more than one eligible procedure but are only counted once. Alternatively, a single person may have a second eligible spell (for a second orchidopexy) within the same year. Separate spells for an individual during the same year are counted separately in the numerator.

Denominator:

Denominator data for (i) – The denominator is the resident population for the respective organisation.

Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 28 September 2008.

For further details on revisions to ONS mid-year population estimates, and their availability, see the comments in the specification for the 'Estimates of resident population' indicator.

Counts are by:
age / organisation of residence (values for England are aggregates of these)

where:
age bands are either <1, 1-4, or 5-9,10-14 (two variants of indicator).

Denominator data for (ii) - The denominator is the pooled total for ages 0-4 and 5-14 in (i).

Source of denominator data for (i) - Office for National Statistics.

Source of denominator data for (ii) - HES data for the respective financial year, England, The NHS Information Centre for health and social care.

Comments on denominator data - Ideally, the denominator should include only patients in the community who have undescended testes, who meet the eligibility criteria for orchidopexy. In the absence of routine data on such patients, the total resident population is used as a denominator.

Statistical Methods:

(i) The indicator is indirectly standardised by age using England age rates as standards. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

(ii) The indicator is the indirectly age-standardised rate of orchidopexies undertaken on boys aged 5 to 14 expressed as a percentage of all such procedures carried out on boys aged 0 to 14 inclusive. This indicator is derived from data used for (i) above.

The percentage change in procedure rate (ii) from a previous year, plus the statistical significance of this change, have also been calculated. A positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator - These are procedure-specific, cross-sectional annual comparative indicators, acting as proxies for outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator - Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation and Local Authority level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence interval overlaps the national rate, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity - A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may determine whether a patient gets admitted or not and may influence rates. Differences in case-mix, concurrent illnesses and other potential risk factors also contribute to the variation. Analyses at England level by the Index of Multiple Deprivation are presented.

Other potential confounding factors - The extent to which undescended testes are detected through early childhood screening.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess the longer term impact of late surgery.

Relevant national initiatives:

None known.

Further reading:

1. McColl A J. *Early orchidopexy for cryptorchidism. In 'Population Health Outcome Indicators for the NHS – a feasibility study* (Eds McColl A J, Gulliford M C). London: Faculty of Public Health Medicine, 1993.

Updated: December 2010

Emergency hospital admissions: children with lower respiratory tract infections

Purpose:

The purpose of the indicator is to help monitor National Health Service (NHS) success in prevention and treatment outside hospital in areas that impact on respiratory illnesses in children, e.g. encouraging smoking reduction, especially in young mothers; improving the uptake and continuation of breast feeding; better support for young parents in the care of their children and in management of illnesses in the home; providing support as well as facilitating access to health advice and therapy through NHS Direct; and enhanced primary care. These initiatives form part of NHS targets to reduce inequalities in childhood morbidity and mortality.

Respiratory infections form one of the most common reasons for hospital admission in childhood, especially in infants. Between 1 and 3% of all babies experience an admission with bronchiolitis and about 2.5% of all child admissions are for pneumonia. Emergency admission rates in children, especially under the age of 5 years for lower respiratory infections - bronchiolitis, bronchopneumonia and pneumonia - reflect a variety of influences. Rates vary across the country but are increased in areas of socio-economic deprivation. Previous analyses have shown that they also vary between health authorities, even when social deprivation is taken into account, probably reflecting variation in access to, and expectation of, health services and also clinical practice. Lower rates are linked to higher breast feeding rates and reduction of exposure to tobacco smoke - preventive measures that reduce both incidence and severity of infections.

Definition of indicator and its variants:

Emergency admissions to hospital of children with selected types of lower respiratory tract infections (bronchiolitis, bronchopneumonia and pneumonia).

Statistic	Sex	Age group	Organisation	Period		File-worksheet name
			(see glossary)	Current data	Trend data	
Indirectly age and sex-standardised rate per 100,000 (standardised to 2005/06)	P F M	<16	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County, LA (boundaries as at April 2009); PCO (boundaries as at October 2006); CTY.	FY 2008/09	FY 2002/03 FY 2003/04 FY 2004/05 FY 2005/06 FY 2006/07 FY 2007/08	04Q_524ISR7AP_09_V1 04Q_524ISR7AF_09_V1 04Q_524ISR7AM_09_V1

Numerator:

Numerator data - The number of finished and unfinished continuous inpatient (CIP) spells, excluding transfers, for patients aged 0-15 with an emergency method of admission and with any of the following primary diagnoses (DIAG_01 in the 1st episode of the spell, ICD 10 codes) in the respective financial year:

Bronchiolitis, bronchopneumonia and pneumonia**:**
- J10.0   Influenza with pneumonia virus identified;
- J11.0   Influenza with pneumonia, virus not identified;
- J11.1   Influenza with other respiratory manifestations, virus not identified (bronchiolitis with influenza);
- J12.-   Viral pneumonia nec;
- J13   Pneumonia due to Streptococcus pneumoniae;
- J14   Pneumonia due to Haemophilus influenzae;
- J15.-   Bacterial pneumonia nec;
- J16.-   Pneumonia due to other infectious organisms nec;
- J18.0   Bronchopneumonia, unspecified;
- J18.1   Lobar pneumonia;
- J18.9   Pneumonia unspecified;
- J21.-   Acute bronchiolitis.

The following fields and values are used for the numerator:

The first episode in the CIP spell has:
DIAG_01 in the valid list for this indicator (primary diagnosis);
AND ADMISORC not = 51, 52 or 53 (admission source);

AND EPITYPE = 1 (episode type);
AND SEX = 1 or 2 (sex);
AND EPIORDER = 1 (episode order);
AND ADMIMETH = 21, 22, 23, 24 or 28 (admission method);
AND EPISTART is >= 01/04/YYYY and EPISTART <= 31/03/YYYY+1 (episode start date);
AND CLASSPAT = 1 (patient classification);
AND STARTAGE is 0-15 or 7001-7007 (age at start of episode);
AND DOB not 01/01/1900 or 01/01/1901 (date of birth).

Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Counts are by:
age / sex / organisation of residence in CIP spell (values for England are aggregates of these)

where:
age bands are <1, 1-4, 5-9, 10-15;
sex is 1, 2 (male and female).

Source of numerator data – Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year. England, The NHS Information Centre for health and social care.

Comments on numerator data – It is important, for the purposes of measuring incidence, to count persons as opposed to episodes of care, as each person with the condition should only be counted once during each admission. This is done by counting CIP spells (epiorder 1) only. Some transfers which are also coded epiorder 1 and emergency could lead to double counting. In order to avoid this, spells which have an admisorc of 51-53, indicating a transfer from another NHS Trust, are excluded.

Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March. In order to avoid double counting that spell in both financial years, only spells which started during the financial year of analysis are counted.

Deaths in the community prior to admission are not included, nor are patients who get treated in the community, as data about them are not available.

Emergency method of admission and primary diagnosis are used to distinguish between new disease and readmission for the same problem previously treated in hospital. However, there could be double counting if the readmission is coded as an emergency and has the same primary diagnosis.

Spells are attributed to the organisation of residence, based on the numerator.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). These show the proportion of diagnoses not coded. There may be variation between hospitals in the way that they code diagnoses to the fourteen diagnosis fields in each episode, particularly primary diagnosis. For instance, they may code in the order in which diagnoses were made, or according to the perceived importance or complexity. This may affect whether a particular spell is selected for inclusion in the numerator of this indicator.

Denominator:

Denominator data - The denominator is the resident population for the respective organisation.

Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at September 2009.

For further details on revisions to ONS mid-year population estimates, and their availability, see the comments in the specification for the 'Estimates of resident population' indicator.

Counts are by:
age / sex / organisation of residence (values for England are aggregates of these)

where:
age bands are <1, 1-4, 5-9, 10-15;
sex is 1, 2 (male and female).

Source of denominator data **-** Office for National Statistics.

Statistical Methods:

The indicator is indirectly standardised by age and sex. The person-based rate is standardised by age and sex using England age and sex rates as standards. The gender-specific rates are standardised by age using person-based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age and sex of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in admission rate from a previous year, plus the statistical significance of this change, have also been calculated. A positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator **-** This is a condition-specific, cross-sectional annual comparative indicator, acting as a proxy for outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator – Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals **-** Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation and Local Authority level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence interval overlaps the national rate, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity **-** A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may determine whether a patient gets admitted or not and may influence rates. Differences in case-mix (beyond that accounted for by standardisation), comorbidities and other potential risk factors also contribute to the variation. Current data do not allow assignment of severity of illness across continuous inpatient spells, nor do they allow adjustment for any of these factors. We have tried to deal with this constraint partially by presenting the data in clusters that are similar with respect to organisation type. Gender-specific data standardised to person rates are available.

Other potential confounding factors **-** The patterns of providing care may vary between organisations in terms of: extent of treatment in primary care settings; referral policies and practices; hospital outpatient facilities/walk-in clinics; and hospital inpatient admission policies and practices for children.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess the extent to which admissions were potentially avoidable are recommended.

Relevant national initiatives:

Reduction in hospital admission for lower respiratory tract infections was one of the selected Sure Start targets and reduction of gradients in morbidity formed a major part of the targets for the NHS Plan. A programme of health visiting and school nursing was implemented and included revisions of the universal child health surveillance

programme. All these initiatives have formed a part of the children 's task force and the National Service Framework programme of work.

Further reading:

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4. Chen Y. Synergistic effect of passive smoking and artificial feeding on hospitalization for respiratory illness in early childhood. *Chest* 1989; 95:1004-1007.
5. Dewey K.G., Heinig M.J., Nommsen-Rivers L.A Differences in morbidity between breastfed and Formula fed infants. *Journal of Paediatrics* 1995; 126:696-702.
6. Frank AL, Taber LH, Glezen WP, et al. Breast-feeding and respiratory virus infection. *Pediatrics* 1982;70:239-245.
7. Hawker J, Babatunde Olowokure, Sufi F, Weinberg J, O. Gill N, Wilson W. *Social inequalities and hospital admission for respiratory infection.* W Midlands PHLS : submitted 2000.
8. Heinig M.J., Dewey K.G. Health advantages of breastfeeding for infants. Critical review. *Nutrition Research Reviews* 1996; 9: 89-110.
9. Howie P.W., Forsyth J.S., Ogston S.A., Clark A., Florey C. Protective effect of breastfeeding against infection. *British Medical Journal* 1990; 300: 11-16.
10. MacFaul R, Jones S, and Werneke U. Clinical training experience in district general hospitals *Arch. Dis. Child* 2000; 83: 39-44.
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12. Taylor, J., Spencer, N., Baldwin;, N., Sturge;, C., Speight, ANP, Hoghughi, M. Current topic: Social, economic, and political context of parenting. *Arch. Dis. Child* 2000; 82: 113-120.
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Wright AL, Holberg CJ, Taussig LM, et al. Relationship of infant feeding to recurrent wheezing at age 6 years. *Arch Pediatr Adolesc Med* 1995;149: 758-763.

Updated: November 2010

Emergency hospital admissions: children with gastroenteritis

Purpose:

The purpose of the indicator is to help monitor National Health Service (NHS) success in treatment outside hospital of types of childhood gastroenteritis that have limited morbidity or need for hospital-based care and low mortality, through e.g. encouraging breast feeding, better diet, hygiene, and management of infections; better support for young parents in the care of their children and in the management of illnesses in the home; providing support as well as facilitating access to health advice and therapy through NHS Direct; and enhanced primary care.

Definition of indicator and its variants:

Emergency admissions to hospital of children with selected types of gastroenteritis.

Statistic	Sex	Age group	Organisation	Period		File-worksheet name
			(see glossary)	Current data	Trend data	
Indirectly age and sex-standardised rate per 100,000 (standardised to 2005/06)	P F M	<5	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County, LA (boundaries as at April 2009); PCO (boundaries as at October 2006); CTY.	FY 2008/09	FY 2002/03 FY 2003/04 FY 2004/05 FY 2005/06 FY 2006/07 FY 2007/08	04R_525ISR7BP_09_V1 04R_525ISR7BF_09_V1 04R_525ISR7BM_09_V1

Numerator:

Numerator data - The number of finished and unfinished continuous inpatient (CIP) spells, excluding transfers, for patients aged 0-4 with an emergency method of admission and with any of the following primary diagnoses (DIAG_01 in the 1st episode of the spell, ICD 10 codes) in the respective financial year:

Intestinal infectious diseases:

- A02.0   Salmonella enteritis;
- A04.-   Other bacterial intestinal infections;
- A05.9   Bacterial food borne intoxication unspecified;
- A07.2   Cryptosporidiosis;
- A08.0   Rotaviral enteritis;
- A08.1   Acute gastroenteropathy due to Norwalk agent;
- A08.3   Other viral enteritis;
- A08.4   Viral intestinal infection unspecified;
- A08.5   Other specified intestinal infections;
- A09.-   Diarrhoea and gastroenteritis of presumed infectious origin.

Other non-infective gastroenteritis and colitis:

- K52.0   Gastroenteritis and colitis due to radiation;
- K52.1   Toxic gastroenteritis and colitis;
- K52.2   Allergic and dietetic gastroenteritis and colitis;
- K52.8   Other specified non-infective gastroenteritis and colitis;
- K52.9   Non-infective gastroenteritis and colitis unspecified.

The following fields and values are used for the numerator:

The first episode in the CIP spell has:
        DIAG_01 in the valid list for this indicator (primary diagnosis);
        AND ADMISORC not = 51, 52 or 53 (admission source);
        AND EPITYPE = 1 (episode type);
        AND SEX = 1 or 2 (sex);
        AND EPIORDER = 1 (episode order);
        AND ADMIMETH = 21, 22, 23, 24 or 28 (admission method);
        AND EPISTART is >= 01/04/YYYY and EPISTART <= 31/03/YYYY+1 (episode start date);
        AND CLASSPAT = 1(patient classification);

AND STARTAGE is 0-4 or 7001-7007 (age at start of episode);
AND DOB not 01/01/1900 or 01/01/1901 (date of birth).

Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Counts are by:
age / sex / organisation of residence in CIP spell (values for England are aggregates of these)

where:
age bands are <1, 1-4;
sex is 1, 2 (male and female).

Source of numerator data – Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year. England, The NHS Information Centre for health and social care.

Comments on numerator data – It is important, for the purposes of measuring incidence, to count persons as opposed to episodes of care, as each person with the condition should only be counted once during each admission. This is done by counting CIP spells (epiorder 1) only. Some transfers which are also coded epiorder 1 and emergency could lead to double counting. In order to avoid this, spells which have an admisorc of 51-53, indicating a transfer from another NHS Trust, are excluded.

Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March. In order to avoid double counting that spell in both financial years, only spells which started during the financial year of analysis are counted.

Deaths in the community prior to admission are not included, nor are patients who get treated in the community, as data about them are not available.

Emergency method of admission and primary diagnosis are used to distinguish between new disease and readmission for the same problem previously treated in hospital. However, there could be double counting if the readmission is coded as an emergency and has the same primary diagnosis.

Spells are attributed to the organisation of residence, based on the numerator.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). These show the proportion of diagnoses not coded. Non-infective gastroenteritis may be miscoded as infectious and vice-versa, hence both sets of codes are used for the numerator. There may be variation between hospitals in the way that they code diagnoses to the fourteen diagnosis fields in each episode, particularly primary diagnosis. For instance, they may code in the order in which diagnoses were made, or according to the perceived importance or complexity. This may affect whether a particular spell is selected for inclusion in the numerator of this indicator.

Denominator:

Denominator data - The denominator is the resident population for the respective organisation.

Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at September 2009.

For further details on revisions to ONS mid-year population estimates, and their availability, see the comments in the specification for the 'Estimates of resident population' indicator.

Counts are by:
age / sex / organisation of residence (values for England are aggregates of these)

where:
age bands are <1, 1-4;
sex is 1, 2 (male and female).

Source of denominator data - Office for National Statistics.

Statistical Methods:

The indicator is indirectly standardised by age and sex. The person-based rate is standardised by age and sex using England age and sex rates as standards. The gender-specific rates are standardised by age using person-based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age and sex of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in admission rate from a previous year, plus the statistical significance of this change, have also been calculated. A positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator **-** This is a condition-specific, cross-sectional annual comparative indicator, acting as a proxy for outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator – Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals **-** Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation and Local Authority level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence interval overlaps the national rate, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity **-** A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may determine whether a patient gets admitted or not and may influence rates. Differences in case-mix (beyond that accounted for by standardisation), comorbidities and other potential risk factors also contribute to the variation. Current data do not allow assignment of severity of illness across continuous inpatient spells, nor do they allow adjustment for any of these factors. We have tried to deal with this constraint partially by presenting the data in clusters that are similar with respect to organisation type. Gender-specific data standardised to person rates are available.

Other potential confounding factors **-** The patterns of providing care may vary between organisations in terms of: extent of treatment in primary care settings; referral policies and practices; hospital outpatient facilities/walk-in clinics; and hospital inpatient admission policies and practices for children.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess the extent to which admissions were potentially avoidable are recommended.

Relevant national initiatives:

Work within the Department of Health undertaken by the children's task force, in particular in relation to the Sure Start initiative.

Further reading:

1. Conway SP, Newport MJ. Are all hospital admissions for gastroenteritis necessary? *J Infect* 1994; 29: 5-8.

2. MacFaul R, Stewart M, Werneke U, Taylor-Meek J, Smith H E, Smith I J. Parental and professional perception of need for emergency admission to hospital: prospective questionnaire based study. *Arch Dis Child* 1998; 79: 213-218.
3. Sartain S A, Maxwell M J, Todd P J, Jones K H, Bagust A, Haycox A, Bundred P. Randomised controlled trial comparing an acute paediatric hospital at home scheme with conventional hospital care. *Arch Dis Child* 2002; 87: 371-375.

Updated: November 2010

Emergency hospital admissions: children with asthma

Purpose:

The purpose of the indicator is to help monitor National Health Service (NHS) success in treatment outside hospital of children with a condition that has limited morbidity or need for hospital-based care and low mortality, through e.g. better support for young parents in the care of their children and in the management of illnesses in the home; providing support as well as facilitating access to health advice and therapy through NHS Direct; and enhanced primary care. It is acknowledged that admissions are appropriate for some children with severe asthma but the indicator may help to highlight those that are not.

Definition of indicator and its variants:

Emergency admissions to hospital of children with asthma.

Statistic	Sex	Age group	Organisation	Period		File-worksheet Name
			(see glossary)	Current data	Trend data	
Indirectly age and sex-standardised rate per 100,000 (standardised to 2005/06)	P F M	<16	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County; LA (boundaries as at April 2009); PCO (boundaries as at October 2006).	FY 2008/09	FY 2002/03 FY 2003/04 FY 2004/05 FY 2005/06 FY 2006/07 FY 2007/08	04S_536ISR7HP_09_V1 04S_536ISR7HF_09_V1 04S_536ISR7HM_09_V1

Numerator:

Numerator data - The number of finished and unfinished continuous inpatient (CIP) spells, excluding transfers, for patients aged 0-15 with an emergency method of admission and with any of the following primary diagnoses (DIAG_01 in the 1st episode of the spell, ICD 10 codes) in the respective financial year:

Asthma:

- J45.0   Predominantly allergic asthma;
- J45.1   Non-allergic asthma;
- J45.8   Mixed asthma;
- J45.9   Asthma, unspecified.

Status asthmaticus:

- J46.-   Acute severe asthma.

The following fields and values are used for the numerator:

The first episode in the CIP spell has:
DIAG_01 in the valid list for this indicator (primary diagnosis);
AND ADMISORC not = 51, 52 or 53 (admission source);
AND EPITYPE = 1 (episode type);
AND SEX = 1 or 2 (sex);
AND EPIORDER = 1 (episode order);
AND ADMIMETH = 21, 22, 23, 24 or 28 (admission method);
AND EPISTART is >= 01/04/YYYY and EPISTART <= 31/03/YYYY+1 (episode start date);
AND CLASSPAT = 1 (patient classification);
AND STARTAGE is 0-15 or 7001-7007 (age at start of episode);
AND DOB not 01/01/1900 or 01/01/1901 (date of birth).

Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Counts are by:

age / sex / organisation of residence in CIP spell (values for England are aggregates of these)

> where:
> > age bands are <1, 1-4, 5-9, 10-15;
> > sex is 1, 2 (male and female).

Source of numerator data – Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year, England, The NHS Information Centre for health and social care.

Comments on numerator data – It is important, for the purposes of measuring incidence, to count persons as opposed to episodes of care, as each person with the condition should only be counted once during each admission. This is done by counting CIP spells (epiorder 1) only. Some transfers which are also coded epiorder 1 and emergency could lead to double counting. In order to avoid this, spells which have an admisorc of 51-53, indicating a transfer from another NHS Trust, are excluded.

ndividual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March. In order to avoid double counting that spell in both financial years, only spells which started during the financial year of analysis are counted.

Deaths in the community prior to admission are not included, nor are patients who get treated in the community, as data about them are not available.

Emergency method of admission and primary diagnosis are used to distinguish between new disease and readmission for the same problem previously treated in hospital. However, there could be double counting if the readmission is coded as an emergency and has the same primary diagnosis.

Spells are attributed to the organisation of residence, based on the numerator.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). These show the proportion of diagnoses not coded. There may be variation between hospitals in the way that they code diagnoses to the fourteen diagnosis fields in each episode, particularly primary diagnosis. For instance, they may code in the order in which diagnoses were made, or according to the perceived importance or complexity. This may affect whether a particular spell is selected for inclusion in the numerator of this indicator.

Denominator:

Denominator data - The denominator is the resident population for the respective organisation.

Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 29 September 2008.

In the absence of published population data for the years 2002 and 2003 for the age band 10-15 for 22 PCOs not coterminous with Local Authorities, estimated populations have been derived using the 10-14 age band plus a % of the 15-19 year age band for that year, based on the % 15-19 year olds who are aged 15 in the published 2004 ONS population estimates. For this reason, the PCO total does not exactly equate to the England total in 2002 and 2003.
For further details on revisions to ONS mid-year population estimates, and their availability, see the comments in the specification for the 'Estimates of resident population' indicator.

> Counts are by:
> > age / sex / organisation of residence (values for England are aggregates of these)

> where:
> > age bands are <1, 1-4, 5-9, 10-15;
> > sex is 1, 2 (male and female).

Source of denominator data - Office for National Statistics.

Comments on denominator data - Ideally, the denominator should include only patients in the community with diabetes. In the absence of routine data on such patients, the total resident population is used as a denominator.

Statistical Methods:

The indicator is indirectly standardised by age and sex. The person-based rate is standardised by age and sex using England age and sex rates as standards. The gender-specific rates are standardised by age using person-based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of

the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age and sex of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in admission rate from a previous year, plus the statistical significance of this change, have also been calculated. A positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator - This is a condition-specific, cross-sectional annual comparative indicator, acting as a proxy for outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator – Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation and Local Authority level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall national rate, the difference between the two rates is considered statistically significant. If the confidence interval overlaps the **national** rate, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity - A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may determine whether a patient gets admitted or not and may influence rates. Differences in case-mix (beyond that accounted for by standardisation), comorbidities and other potential risk factors also contribute to the variation. Current data do not allow assignment of severity of illness across continuous inpatient spells, nor do they allow adjustment for any of these factors. We have tried to deal with this constraint partially by presenting the data in clusters that are similar with respect to organisation type. Gender-specific data standardised to person rates are available.

Other potential confounding factors - The patterns of providing care may vary between organisations in terms of: extent of treatment in primary care settings; referral policies and practices; hospital outpatient facilities/walk-in clinics; and hospital inpatient admission policies and practices for children.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess the extent to which admissions were potentially avoidable are recommended.

Relevant national initiatives:

Work within the Department of Health undertaken by the children's task force.

Further reading:

1. MacFaul R, Stewart M, Werneke U, Taylor-Meek J, Smith H E, Smith I J. Parental and professional perception of need for emergency admission to hospital: prospective questionnaire based study. *Arch Dis Child 1998*; 79: 213-218.
2. Sartain S A, Maxwell M J, Todd P J, Jones K H, Bagust A, Haycox A, Bundred P. Randomised controlled trial comparing an acute paediatric hospital at home scheme with conventional hospital care. *Arch Dis Child 2002*; 87: 371-375.

Updated: December 2010

Oral health in children: decayed teeth

Purpose:

To provide standardised, information about dental decay levels among child age cohorts using population representative random samples.

Definition of indicator and its variants:

Mean number of actively decayed, untreated teeth, *i.e.* teeth which require treatment, per child in the whole age group.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Mean number per child	P	5 12	E, GOR, SHA, LA, PCO E, GOR, SHA, LA, PCO	AY 2007/08 AY 2008/09		40A_115MNP1_08_V2 40A_115MNP2_09_V1

Numerator:

Numerator data - Number of decayed teeth in the survey sample of children in the respective academic year.

Source of numerator data - NHS Dental Epidemiology Programme undertaken by Primary Care Organisations and co-ordinated by The Dental Observatory and NWPHO with standardisation by the British Society for the Study of Community Dentistry.

Comments on numerator data - The data for 5 year olds relate to deciduous (milk) teeth (dt), and the data for 12 year olds relate to permanent teet (DT).

Currently, the North West Public Health Observatory / The Dental Observatory (NWPHO / TDO) have taken on responsibility for the English co-ordination of dental epidemiological surveys and released 2007/08 data for five year olds as the first data set published under their auspices and more recently 2008/09 data for twelve year olds. For more details see: http://www.nwph.net/dentalhealth/

Denominator:

Denominator data - Number of children in the survey sample.

Source of denominator data - Office for National Statistics (ONS) Single Year of Age mid year estimates.

Comments on denominator data - The data source is a series of nationally co-ordinated dental epidemiological surveys commissioned by individual Health Authorities to standardised national protocols and diagnostic standards (see "Further reading") and involving the dental examination of children in the specified age-group, in state schools. The data source is part of a cycle of nationally co-ordinated dental epidemiological surveys as outlined in *Health Service Guidelines* (93)25.

Historically, the nationally co-ordinated programme consisted of a study of dental decay in the milk teeth of five year old children undertaken in alternate academic years with surveys of the permanent teeth of twelve year olds and of 14 year olds undertaken at four-yearly intervals and fitting into the years between surveys of five year olds. However, in 2006/07 academic year it was decided that there was limited value in surveying 14 year olds, mainly because of major difficulties in some areas in obtaining access to that age group. Consequently, 14 year olds have been now removed from the survey cycle.

The data relate to children attending state schools in an area. National minimum standards are set for the random sampling of children to obtain a sample representative of the age-group in the area. Many Health Authorities commission larger samples in order to obtain data on intra-district variations in dental caries for local planning purposes.

Data are collected locally and collated by The Dental Observatory. Summary data are reported by NWPHO and are also available via BASCD and the society's journal Community Dental Health.

Statistical methods:

The national and sub-national figures for the most recent surveys of 5 and 12 year olds are weighted by deprivation quintile and, where necessary, sample size.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Due to changes in the method of obtaining consent the survey of 5 year olds conducted in 2007/08 should not be used for backwards comparison. There is clear evidence of bias but the measurement of this is not possible and varies from one sample to another. The source data has clear caveats about the use of this dataset and should be referred to, along with statements made about the dataset at :
http://www.nwph.info/dentalhealth/reports/Statements_re_NHS_DEP_5_yr_olds_2007_08.pdf

Further reading:

1. NHS Dental Epidemiology Programme for England. Oral Health Survey of 12 year old Children 2008 / 2009. *Summary of caries prevalence and severity results.* NWPHO / TDO. November 2010. Available at:
http://www.nwph.net/dentalhealth/reports/Report_NHS_DEP_for_England_OH_Survey_12yr_2008-09.pdf
2. NHS Dental Epidemiology Programme. Oral Health Survey of 12 year old children in England 2008/2009. *National protocol.* January 2009. Available at:
http://www.nwph.net/dentalhealth/reports/National_Protocol_for_2008_09_12%20yr%20olds.pdf
3. NHS Dental Epidemiology Programme for England. Oral Health Survey of 5 year old Children. *Summary report.* NWPHO / TDO. October 2009. Available at:
http://www.nwph.net/dentalhealth/reports/NHS_DEP_for_England_OH_Survey_5yr_2007-08_Report.pdf
4. Mitropoulos C, Pitts NB, Deery C. *British Association for the Study of Community Dentistry. Criteria for standard assessment of dental health. BASCD Trainers Pack for Caries Prevalence Studies 1992-93.* Dundee: University of Dundee, 1992.

Updated: June 2011

Oral health in children: missing teeth

Purpose:

To provide standardised, information about dental decay levels among child age cohorts using population representative random samples.

Definition of indicator and its variants:

Mean number of teeth per child missing due to dental caries (decay) in the whole age-group, *i.e.* teeth which decayed in the past and were treated by extraction.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Mean number per child	P	5 12	E, GOR, SHA, LA, PCO E, GOR, SHA, LA, PCO	AY 2007/08 AY 2008/09		40B_116MNP1_08_V2 40B_116MNP2_09_V1

Numerator:

Numerator data - Number of missing teeth in the survey sample of children in the respective academic year.

Source of numerator data - NHS Dental Epidemiology Programme undertaken by Primary Care Organisations and co-ordinated by The Dental Observatory and NWPHO with standardisation by the British Society for the Study of Community Dentistry.

Comments on numerator data - The data for 5 year olds relate to deciduous (milk) teeth (mt), and the data for 12 year olds relate to permanent teeth (MT).

Currently, the North West Public Health Observatory / The Dental Observatory (NWPHO / TDO) have taken on responsibility for the English co-ordination of dental epidemiological surveys and released 2007/08 data for five year olds as the first data set published under their auspices and more recently 2008/09 data for twelve year olds. For more details see: http://www.nwph.net/dentalhealth/

Denominator:

Denominator data - Number of children in the survey sample.

Source of denominator data - Office for National Statistics (ONS) Single Year of Age mid year estimates.

Comments on denominator data - The data source is a series of nationally co-ordinated dental epidemiological surveys commissioned by individual Health Authorities to standardised national protocols and diagnostic standards (see "Further reading") and involving the dental examination of children in the specified age-group, in state schools. The data source is part of a cycle of nationally co-ordinated dental epidemiological surveys as outlined in *Health Service Guidelines* (93)25.

Historically, the nationally co-ordinated programme consisted of a study of dental decay in the milk teeth of five year old children undertaken in alternate academic years with surveys of the permanent teeth of twelve year olds and of 14 year olds undertaken at four-yearly intervals and fitting into the years between surveys of five year olds. However, in 2006/07 academic year it was decided that there was limited value in surveying 14 year olds, mainly because of major difficulties in some areas in obtaining access to that age group. Consequently, 14 year olds have been now removed from the survey cycle.

The data relate to children attending state schools in an area. National minimum standards are set for the random sampling of children to obtain a sample representative of the age-group in the area. Many Health Authorities commission larger samples in order to obtain data on intra-district variations in dental caries for local planning purposes.

Data are collected locally and collated by The Dental Observatory. Summary data are reported by NWPHO and are also available via BASCD and the society's journal Community Dental Health.

Statistical methods:

The national and sub-national figures for the most recent surveys of 5 and 12 year olds are weighted by deprivation quintile and, where necessary, sample size.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Due to changes in the method of obtaining consent the survey of 5 year olds conducted in 2007/08 should not be used for backwards comparison. There is clear evidence of bias but the measurement of this is not possible and varies from one sample to another. The source data has clear caveats about the use of this dataset and should be referred to, along with statements made about the dataset at :
http://www.nwph.info/dentalhealth/reports/Statements_re_NHS_DEP_5_yr_olds_2007_08.pdf

Further reading:

1. NHS Dental Epidemiology Programme for England. Oral Health Survey of 12 year old Children 2008 / 2009. *Summary of caries prevalence and severity results.* NWPHO / TDO. November 2010. Available at:
    http://www.nwph.net/dentalhealth/reports/Report_NHS_DEP_for_England_OH_Survey_12yr_2008-09.pdf
2. NHS Dental Epidemiology Programme. Oral Health Survey of 12 year old children in England 2008/2009. *National protocol.* January 2009. Available at:
    http://www.nwph.net/dentalhealth/reports/National_Protocol_for_2008_09_12%20yr%20olds.pdf
3. NHS Dental Epidemiology Programme for England. Oral Health Survey of 5 year old Children. *Summary report.* NWPHO / TDO. October 2009. Available at:
    http://www.nwph.net/dentalhealth/reports/NHS_DEP_for_England_OH_Survey_5yr_2007-08_Report.pdf
4. Mitropoulos C, Pitts NB, Deery C. *British Association for the Study of Community Dentistry. Criteria for standard assessment of dental health. BASCD Trainers Pack for Caries Prevalence Studies 1992-93.* Dundee: University of Dundee, 1992.

Updated: June 2011

Oral health in children: filled teeth

Purpose:

To provide standardised, information about dental decay levels among child age cohorts using population representative random samples.

Definition of indicator and its variants:

Mean number of filled otherwise sound teeth per child in the whole age-group, *i.e.* teeth which decayed in the past, and were treated by filling, and which do not currently require further treatment.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Mean number per child	P	5 12	E, GOR, SHA, LA, PCO E, GOR, SHA, LA, PCO	AY 2007/08 AY 2008/09		40C_117MNP1_08_V2 40C_117MNP2_09_V1

Numerator:

Numerator data - Number of filled teeth in the survey sample of children in the respective academic years.

Source of numerator data - NHS Dental Epidemiology Programme undertaken by Primary Care Organisations and co-ordinated by The Dental Observatory and NWPHO with standardisation by the British Society for the Study of Community Dentistry.

Comments on numerator data - The data for 5 year olds relate to deciduous (milk) teeth (ft), and the data for 12 year olds relate to permanent teeth (FT).

Currently, the North West Public Health Observatory / The Dental Observatory (NWPHO / TDO) have taken on responsibility for the English co-ordination of dental epidemiological surveys and released 2007/08 data for five year olds as the first data set published under their auspices and more recently 2008/09 data for twelve year olds. For more details see: http://www.nwph.net/dentalhealth/

Denominator:

Denominator data - Number of children in the survey sample.

Source of denominator data - Office for National Statistics (ONS) Single Year of Age mid year estimates.

Comments on denominator data - The data source is a series of nationally co-ordinated dental epidemiological surveys commissioned by individual Health Authorities to standardised national protocols and diagnostic standards (see "Further reading") and involving the dental examination of children in the specified age-group, in state schools. The data source is part of a cycle of nationally co-ordinated dental epidemiological surveys as outlined in *Health Service Guidelines* (93)25.

Historically, the nationally co-ordinated programme consisted of a study of dental decay in the milk teeth of five year old children undertaken in alternate academic years with surveys of the permanent teeth of twelve year olds and of 14 year olds undertaken at four-yearly intervals and fitting into the years between surveys of five year olds. However, in 2006/07 academic year it was decided that there was limited value in surveying 14 year olds, mainly because of major difficulties in some areas in obtaining access to that age group. Consequently, 14 year olds have been now removed from the survey cycle.

The data relate to children attending state schools in an area. National minimum standards are set for the random sampling of children to obtain a sample representative of the age-group in the area. Many Health Authorities commission larger samples in order to obtain data on intra-district variations in dental caries for local planning purposes.

Data are collected locally and collated by The Dental Observatory. Summary data are reported by NWPHO and are also available via BASCD and the society's journal Community Dental Health.

Statistical methods:

The national and sub-national figures for the most recent surveys of 5 and 12 year olds are weighted by deprivation quintile and, where necessary, sample size.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Due to changes in the method of obtaining consent the survey of 5 year olds conducted in 2007/08 should not be used for backwards comparison. There is clear evidence of bias but the measurement of this is not possible and varies from one sample to another. The source data has clear caveats about the use of this dataset and should be referred to, along with statements made about the dataset at :
http://www.nwph.info/dentalhealth/reports/Statements_re_NHS_DEP_5_yr_olds_2007_08.pdf

Further reading:

1. NHS Dental Epidemiology Programme for England. Oral Health Survey of 12 year old Children 2008 / 2009. *Summary of caries prevalence and severity results.* NWPHO / TDO. November 2010. Available at: http://www.nwph.net/dentalhealth/reports/Report_NHS_DEP_for_England_OH_Survey_12yr_2008-09.pdf
2. NHS Dental Epidemiology Programme. Oral Health Survey of 12 year old children in England 2008/2009. *National protocol*. January 2009. Available at: http://www.nwph.net/dentalhealth/reports/National_Protocol_for_2008_09_12%20yr%20olds.pdf
3. NHS Dental Epidemiology Programme for England. Oral Health Survey of 5 year old Children. *Summary report.* NWPHO / TDO. October 2009. Available at: http://www.nwph.net/dentalhealth/reports/NHS_DEP_for_England_OH_Survey_5yr_2007-08_Report.pdf
4. Mitropoulos C, Pitts NB, Deery C. *British Association for the Study of Community Dentistry. Criteria for standard assessment of dental health. BASCD Trainers Pack for Caries Prevalence Studies 1992-93.* Dundee: University of Dundee, 1992.

Updated: June 2011

Oral health in children: decayed/missing/filled teeth

Purpose:

To provide standardised, information about dental decay levels among child age cohorts using population representative random samples.

Definition of indicator and its variants:

Mean number of teeth per child in the whole age-group which are either actively decayed and require treatment or which were treated for decay either by extraction or filling, *i.e.* the mean number of teeth which were affected by decay. This is a summation of the mean number of decayed/missing/filled teeth.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Mean number per child	P	5 12	E, GOR, SHA, LA, PCO E, GOR, SHA, LA, PCO	AY 2007/08 AY 2008/09		40D_118MNP1_08_V2 40D_118MNP2_09_V1

Numerator:

Numerator data - Number of decayed/missing/filled teeth in the survey sample of children in the respective academic year.

Source of numerator data - NHS Dental Epidemiology Programme undertaken by Primary Care Organisations and co-ordinated by The Dental Observatory and NWPHO with standardisation by the British Society for the Study of Community Dentistry.

Comments on numerator data - The data for 5 year olds relate to deciduous (milk) teeth (dmft), and the data for 12 year olds relate to permanent teeth (DMFT).

Currently, the North West Public Health Observatory / The Dental Observatory (NWPHO / TDO) have taken on responsibility for the English co-ordination of dental epidemiological surveys and released 2007/08 data for five year olds as the first data set published under their auspices and more recently 2008/09 data for twelve year olds. For more details see: http://www.nwph.net/dentalhealth/

Denominator:

Denominator data - Number of children in the survey sample.

Source of denominator data - Office for National Statistics (ONS) Single Year of Age mid year estimates.

Comments on denominator data - The data source is a series of nationally co-ordinated dental epidemiological surveys commissioned by individual Health Authorities to standardised national protocols and diagnostic standards (see "Further reading") and involving the dental examination of children in the specified age-group, in state schools. The data source is part of a cycle of nationally co-ordinated dental epidemiological surveys as outlined in *Health Service Guidelines* (93)25.

Historically, the nationally co-ordinated programme consisted of a study of dental decay in the milk teeth of five year old children undertaken in alternate academic years with surveys of the permanent teeth of twelve year olds and of 14 year olds undertaken at four-yearly intervals and fitting into the years between surveys of five year olds. However, in 2006/07 academic year it was decided that there was limited value in surveying 14 year olds, mainly because of major difficulties in some areas in obtaining access to that age group. Consequently, 14 year olds have been now removed from the survey cycle.

The data relate to children attending state schools in an area. National minimum standards are set for the random sampling of children to obtain a sample representative of the age-group in the area. Many Health Authorities commission larger samples in order to obtain data on intra-district variations in dental caries for local planning purposes.

Data are collected locally and collated by The Dental Observatory. Summary data are reported by NWPHO and are also available via BASCD and the society's journal Community Dental Health.

Statistical methods:

The national and sub-national figures for the most recent surveys of 5 and 12 year olds are weighted by deprivation quintile and, where necessary, sample size.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Due to changes in the method of obtaining consent the survey of 5 year olds conducted in 2007/08 should not be used for backwards comparison. There is clear evidence of bias but the measurement of this is not possible and varies from one sample to another. The source data has clear caveats about the use of this dataset and should be referred to, along with statements made about the dataset at :
http://www.nwph.info/dentalhealth/reports/Statements_re_NHS_DEP_5_yr_olds_2007_08.pdf

Further reading:

1. NHS Dental Epidemiology Programme for England. Oral Health Survey of 12 year old Children 2008 / 2009. *Summary of caries prevalence and severity results.* NWPHO / TDO. November 2010. Available at:
    http://www.nwph.net/dentalhealth/reports/Report_NHS_DEP_for_England_OH_Survey_12yr_2008-09.pdf
2. NHS Dental Epidemiology Programme. Oral Health Survey of 12 year old children in England 2008/2009. *National protocol.* January 2009. Available at:
    http://www.nwph.net/dentalhealth/reports/National_Protocol_for_2008_09_12%20yr%20olds.pdf
3. NHS Dental Epidemiology Programme for England. Oral Health Survey of 5 year old Children. *Summary report.* NWPHO / TDO. October 2009. Available at:
    http://www.nwph.net/dentalhealth/reports/NHS_DEP_for_England_OH_Survey_5yr_2007-08_Report.pdf
4. Mitropoulos C, Pitts NB, Deery C. *British Association for the Study of Community Dentistry. Criteria for standard assessment of dental health. BASCD Trainers Pack for Caries Prevalence Studies 1992-93.* Dundee: University of Dundee, 1992.

Updated: June 2011

Oral health in children: experience of dental decay

Purpose:

To provide standardised, information about dental decay levels among child age cohorts using population representative random samples.

Definition of indicator and its variants:

The percentage of children in the whole age-group with any decayed/missing/filled teeth *i.e.* the proportion of children with a dmft/DMFT score greater than zero, and therefore some experience of dental decay.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Percent of children with dmft/DMFT>0	P	5	E, GOR, SHA, LA, PCO	AY 2007/08		40E_119PCP1_08_V2
		12	E, GOR, SHA, LA, PCO	AY 2008/09		40E_119PCP2_09_V1

Numerator:

Numerator data - Number of children with decayed/missing/filled teeth in the survey sample of children *i.e.* dmft/DMFT > 0 in the respective academic year.

Source of numerator data - NHS Dental Epidemiology Programme undertaken by Primary Care Organisations and co-ordinated by The Dental Observatory and NWPHO with standardisation by the British Society for the Study of Community Dentistry.

Comments on numerator data - The data for 5 year olds relate to deciduous (milk) teeth (dmft), and the data for 12 year olds relate to permanent teeth (DMFT).

Currently, the North West Public Health Observatory / The Dental Observatory (NWPHO / TDO) have taken on responsibility for the English co-ordination of dental epidemiological surveys and released 2007/08 data for five year olds as the first data set published under their auspices and more recently 2008/09 data for twelve year olds. For more details see: http://www.nwph.net/dentalhealth/

Denominator:

Denominator data - Number of children in the survey sample.

Source of denominator data - Office for National Statistics (ONS) Single Year of Age mid year estimates.

Comments on denominator data - The data source is a series of nationally co-ordinated dental epidemiological surveys commissioned by individual Health Authorities to standardised national protocols and diagnostic standards (see "Further reading") and involving the dental examination of children in the specified age-group, in state schools. The data source is part of a cycle of nationally co-ordinated dental epidemiological surveys as outlined in *Health Service Guidelines* (93)25.

Historically, the nationally co-ordinated programme consisted of a study of dental decay in the milk teeth of five year old children undertaken in alternate academic years with surveys of the permanent teeth of twelve year olds and of 14 year olds undertaken at four-yearly intervals and fitting into the years between surveys of five year olds. However, in 2006/07 academic year it was decided that there was limited value in surveying 14 year olds, mainly because of major difficulties in some areas in obtaining access to that age group. Consequently, 14 year olds have been now removed from the survey cycle.

The data relate to children attending state schools in an area. National minimum standards are set for the random sampling of children to obtain a sample representative of the age-group in the area. Many Health Authorities commission larger samples in order to obtain data on intra-district variations in dental caries for local planning purposes.

Data are collected locally and collated by The Dental Observatory. Summary data are reported by NWPHO and are also available via BASCD and the society's journal Community Dental Health.

Statistical methods:

The national and sub-national figures for the most recent surveys of 5 and 12 year olds are weighted by deprivation quintile and, where necessary, sample size.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Due to changes in the method of obtaining consent the survey of 5 year olds conducted in 2007/08 should not be used for backwards comparison. There is clear evidence of bias but the measurement of this is not possible and varies from one sample to another. The source data has clear caveats about the use of this dataset and should be referred to, along with statements made about the dataset at :
http://www.nwph.info/dentalhealth/reports/Statements_re_NHS_DEP_5_yr_olds_2007_08.pdf

Further reading:

1. NHS Dental Epidemiology Programme for England. Oral Health Survey of 12 year old Children 2008 / 2009. *Summary of caries prevalence and severity results.* NWPHO / TDO. November 2010. Available at:
http://www.nwph.net/dentalhealth/reports/Report_NHS_DEP_for_England_OH_Survey_12yr_2008-09.pdf
2. NHS Dental Epidemiology Programme. Oral Health Survey of 12 year old children in England 2008/2009. *National protocol*. January 2009. Available at:
http://www.nwph.net/dentalhealth/reports/National_Protocol_for_2008_09_12%20yr%20olds.pdf
3. NHS Dental Epidemiology Programme for England. Oral Health Survey of 5 year old Children. *Summary report.* NWPHO / TDO. October 2009. Available at:
http://www.nwph.net/dentalhealth/reports/NHS_DEP_for_England_OH_Survey_5yr_2007-08_Report.pdf
4. Mitropoulos C, Pitts NB, Deery C. *British Association for the Study of Community Dentistry. Criteria for standard assessment of dental health. BASCD Trainers Pack for Caries Prevalence Studies 1992-93.* Dundee: University of Dundee, 1992.

Updated: June 2011

Oral health in children: percentage with decayed teeth

Purpose:

To provide standardised, information about dental decay levels among child age cohorts using population representative random samples.

Definition of indicator and its variants:

The percentage of children in the whole age-group who have active dental decay, *i.e.* the proportion of children requiring treatment.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Percent of children with dt/DT>0	P	5 12	E, GOR, SHA, LA, PCO E, GOR, SHA, LA, PCO	AY 2007/08 AY 2008/09		40F_120PCP1_08_V2 40F_120PCP2_09_V1

Numerator:

Numerator data - Number of children with decayed teeth in the survey sample of children *i.e.* dt/DT > 0 in the respective academic year.

Source of numerator data - NHS Dental Epidemiology Programme undertaken by Primary Care Organisations and co-ordinated by The Dental Observatory and NWPHO with standardisation by the British Society for the Study of Community Dentistry.

Comments on numerator data - The data for 5 year olds relate to deciduous (milk) teeth (dt), and the data for 12 year olds relate to permanent teeth (DT).

Currently, the North West Public Health Observatory / The Dental Observatory (NWPHO / TDO) have taken on responsibility for the English co-ordination of dental epidemiological surveys and released 2007/08 data for five year olds as the first data set published under their auspices and more recently 2008/09 data for twelve year olds. For more details see: http://www.nwph.net/dentalhealth/

Denominator:

Denominator data - Number of children in the survey sample.

Source of denominator data - Office for National Statistics (ONS) Single Year of Age mid year estimates.

Comments on denominator data - The data source is a series of nationally co-ordinated dental epidemiological surveys commissioned by individual Health Authorities to standardised national protocols and diagnostic standards (see "Further reading") and involving the dental examination of children in the specified age-group, in state schools. The data source is part of a cycle of nationally co-ordinated dental epidemiological surveys as outlined in *Health Service Guidelines* (93)25.

Historically, the nationally co-ordinated programme consisted of a study of dental decay in the milk teeth of five year old children undertaken in alternate academic years with surveys of the permanent teeth of twelve year olds and of 14 year olds undertaken at four-yearly intervals and fitting into the years between surveys of five year olds. However, in 2006/07 academic year it was decided that there was limited value in surveying 14 year olds, mainly because of major difficulties in some areas in obtaining access to that age group. Consequently, 14 year olds have been now removed from the survey cycle.

The data relate to children attending state schools in an area. National minimum standards are set for the random sampling of children to obtain a sample representative of the age-group in the area. Many Health Authorities commission larger samples in order to obtain data on intra-district variations in dental caries for local planning purposes.

Data are collected locally and collated by The Dental Observatory. Summary data are reported by NWPHO and are also available via BASCD and the society's journal Community Dental Health.

Statistical methods:

The national and sub-national figures for the most recent surveys of 5 and 12 year olds are weighted by deprivation quintile and, where necessary, sample size.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Due to changes in the method of obtaining consent the survey of 5 year olds conducted in 2007/08 should not be used for backwards comparison. There is clear evidence of bias but the measurement of this is not possible and varies from one sample to another. The source data has clear caveats about the use of this dataset and should be referred to, along with statements made about the dataset at :
http://www.nwph.info/dentalhealth/reports/Statements_re_NHS_DEP_5_yr_olds_2007_08.pdf

Further reading:

1. NHS Dental Epidemiology Programme for England. Oral Health Survey of 12 year old Children 2008 / 2009. *Summary of caries prevalence and severity results.* NWPHO / TDO. November 2010. Available at:
   http://www.nwph.net/dentalhealth/reports/Report_NHS_DEP_for_England_OH_Survey_12yr_2008-09.pdf
2. NHS Dental Epidemiology Programme. Oral Health Survey of 12 year old children in England 2008/2009. *National protocol.* January 2009. Available at:
   http://www.nwph.net/dentalhealth/reports/National_Protocol_for_2008_09_12%20yr%20olds.pdf
3. NHS Dental Epidemiology Programme for England. Oral Health Survey of 5 year old Children. *Summary report.* NWPHO / TDO. October 2009. Available at:
   http://www.nwph.net/dentalhealth/reports/NHS_DEP_for_England_OH_Survey_5yr_2007-08_Report.pdf
4. Mitropoulos C, Pitts NB, Deery C. *British Association for the Study of Community Dentistry. Criteria for standard assessment of dental health. BASCD Trainers Pack for Caries Prevalence Studies 1992-93.* Dundee: University of Dundee, 1992.

Updated: June 2011

Oral health in children: decayed teeth in children with active dental decay

Purpose:

To provide standardised, information about dental decay levels among child age cohorts using population representative random samples.

Definition of indicator and its variants:

The mean number of actively decayed teeth only in those children who have active decay, *i.e.* the mean number of teeth requiring treatment for decay in those children who currently require treatment.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Mean number per child	P	5	E, GOR, SHA, LA, PCO	AY 2007/08		40G_121MNP1_08_V2
		12	E, GOR, SHA, LA, PCO	AY 2008/09		40G_121MNP2_09_V1

Numerator:

Numerator data - Number of decayed teeth in the survey sample of children in the the respective academic year.

Source of numerator data - NHS Dental Epidemiology Programme undertaken by Primary Care Organisations and co-ordinated by The Dental Observatory and NWPHO with standardisation by the British Society for the Study of Community Dentistry.

Comments on numerator data - The data for 5 year olds relate to deciduous (milk) teeth (dt), and the data for 12 year olds relate to permanent teeth (DT).

Currently, the North West Public Health Observatory / The Dental Observatory (NWPHO / TDO) have taken on responsibility for the English co-ordination of dental epidemiological surveys and released 2007/08 data for five year olds as the first data set published under their auspices and more recently 2008/09 data for twelve year olds. For more details see: http://www.nwph.net/dentalhealth/

Denominator:

Denominator data - Number of children with decayed teeth in the survey sample of children *i.e.* dt/DT > 0.

Source of denominator data - Office for National Statistics (ONS) Single Year of Age mid year estimates.

Comments on denominator data - The data source is a series of nationally co-ordinated dental epidemiological surveys commissioned by individual Health Authorities to standardised national protocols and diagnostic standards (see "Further reading") and involving the dental examination of children in the specified age-group, in state schools. The data source is part of a cycle of nationally co-ordinated dental epidemiological surveys as outlined in *Health Service Guidelines* (93)25.

Historically, the nationally co-ordinated programme consisted of a study of dental decay in the milk teeth of five year old children undertaken in alternate academic years with surveys of the permanent teeth of twelve year olds and of 14 year olds undertaken at four-yearly intervals and fitting into the years between surveys of five year olds. However, in 2006/07 academic year it was decided that there was limited value in surveying 14 year olds, mainly because of major difficulties in some areas in obtaining access to that age group. Consequently, 14 year olds have been now removed from the survey cycle.

The data relate to children attending state schools in an area. National minimum standards are set for the random sampling of children to obtain a sample representative of the age-group in the area. Many Health Authorities commission larger samples in order to obtain data on intra-district variations in dental caries for local planning purposes.

Data are collected locally and collated by The Dental Observatory. Summary data are reported by NWPHO and are also available via BASCD and the society's journal Community Dental Health.

Statistical methods:

The national and sub-national figures for the most recent surveys of 5 and 12 year olds are weighted by deprivation quintile and, where necessary, sample size.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Due to changes in the method of obtaining consent the survey of 5 year olds conducted in 2007/08 should not be used for backwards comparison. There is clear evidence of bias but the measurement of this is not possible and varies from one sample to another. The source data has clear caveats about the use of this dataset and should be referred to, along with statements made about the dataset at :
http://www.nwph.info/dentalhealth/reports/Statements_re_NHS_DEP_5_yr_olds_2007_08.pdf

Further reading:

1. NHS Dental Epidemiology Programme for England. Oral Health Survey of 12 year old Children 2008 / 2009. *Summary of caries prevalence and severity results.* NWPHO / TDO. November 2010. Available at: http://www.nwph.net/dentalhealth/reports/Report_NHS_DEP_for_England_OH_Survey_12yr_2008-09.pdf
2. NHS Dental Epidemiology Programme. Oral Health Survey of 12 year old children in England 2008/2009. *National protocol.* January 2009. Available at: http://www.nwph.net/dentalhealth/reports/National_Protocol_for_2008_09_12%20yr%20olds.pdf
3. NHS Dental Epidemiology Programme for England. Oral Health Survey of 5 year old Children. *Summary report.* NWPHO / TDO. October 2009. Available at: http://www.nwph.net/dentalhealth/reports/NHS_DEP_for_England_OH_Survey_5yr_2007-08_Report.pdf
4. Mitropoulos C, Pitts NB, Deery C. *British Association for the Study of Community Dentistry. Criteria for standard assessment of dental health. BASCD Trainers Pack for Caries Prevalence Studies 1992-93.* Dundee: University of Dundee, 1992.

Updated: June 2011

Oral health in children: decayed/missing/filled teeth in children with dental decay

Purpose:

To provide standardised, information about dental decay levels among child age cohorts using population representative random samples.

Definition of indicator and its variants:

The mean number of teeth which are either actively decayed and require treatment or which have been treated for decay by filling or extraction only in those children who have some experience of dental decay, *i.e.* the total dental decay experience (current and past) in children who have had some dental decay experience.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Mean number per child	P	5 12	E, GOR, SHA, LA, PCO E, GOR, SHA, LA, PCO	AY 2007/08 AY 2008/09		40H_122MNP1_08_V2 40H_122MNP2_09_V1

Numerator:

Numerator data - Number of decayed/missing/filled teeth in the survey sample of children in the respective academic year.

Source of numerator data - NHS Dental Epidemiology Programme undertaken by Primary Care Organisations and co-ordinated by The Dental Observatory and NWPHO with standardisation by the British Society for the Study of Community Dentistry.

Comments on numerator data - The data for 5 year olds relate to deciduous (milk) teeth (dmft), and the data for 12 year olds relate to permanent teeth (DMFT).

Currently, the North West Public Health Observatory / The Dental Observatory (NWPHO / TDO) have taken on responsibility for the English co-ordination of dental epidemiological surveys and released 2007/08 data for five year olds as the first data set published under their auspices and more recently 2008/09 data for twelve year olds. For more details see: http://www.nwph.net/dentalhealth/

Denominator:

Denominator data - Number of children with decayed/missing/filled teeth in the survey sample of children *i.e.* dmft/DMFT > 0.

Source of denominator data - Office for National Statistics (ONS) Single Year of Age mid year estimates.

Comments on denominator data - The data source is a series of nationally co-ordinated dental epidemiological surveys commissioned by individual Health Authorities to standardised national protocols and diagnostic standards (see "Further reading") and involving the dental examination of children in the specified age-group, in state schools. The data source is part of a cycle of nationally co-ordinated dental epidemiological surveys as outlined in *Health Service Guidelines* (93)25.

Historically, the nationally co-ordinated programme consisted of a study of dental decay in the milk teeth of five year old children undertaken in alternate academic years with surveys of the permanent teeth of twelve year olds and of 14 year olds undertaken at four-yearly intervals and fitting into the years between surveys of five year olds. However, in 2006/07 academic year it was decided that there was limited value in surveying 14 year olds, mainly because of major difficulties in some areas in obtaining access to that age group. Consequently, 14 year olds have been now removed from the survey cycle.

The data relate to children attending state schools in an area. National minimum standards are set for the random sampling of children to obtain a sample representative of the age-group in the area. Many Health Authorities commission larger samples in order to obtain data on intra-district variations in dental caries for local planning purposes.

Data are collected locally and collated by The Dental Observatory. Summary data are reported by NWPHO and are also available via BASCD and the society's journal Community Dental Health.

Statistical methods:

The national and sub-national figures for the most recent surveys of 5 and 12 year olds are weighted by deprivation quintile and, where necessary, sample size.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Due to changes in the method of obtaining consent the survey of 5 year olds conducted in 2007/08 should not be used for backwards comparison. There is clear evidence of bias but the measurement of this is not possible and varies from one sample to another. The source data has clear caveats about the use of this dataset and should be referred to, along with statements made about the dataset at :
http://www.nwph.info/dentalhealth/reports/Statements_re_NHS_DEP_5_yr_olds_2007_08.pdf

Further reading:

1. NHS Dental Epidemiology Programme for England. Oral Health Survey of 12 year old Children 2008 / 2009. *Summary of caries prevalence and severity results.* NWPHO / TDO. November 2010. Available at: http://www.nwph.net/dentalhealth/reports/Report_NHS_DEP_for_England_OH_Survey_12yr_2008-09.pdf
2. NHS Dental Epidemiology Programme. Oral Health Survey of 12 year old children in England 2008/2009. *National protocol*. January 2009. Available at: http://www.nwph.net/dentalhealth/reports/National_Protocol_for_2008_09_12%20yr%20olds.pdf
3. NHS Dental Epidemiology Programme for England. Oral Health Survey of 5 year old Children. *Summary report.* NWPHO / TDO. October 2009. Available at: http://www.nwph.net/dentalhealth/reports/NHS_DEP_for_England_OH_Survey_5yr_2007-08_Report.pdf
4. Mitropoulos C, Pitts NB, Deery C. *British Association for the Study of Community Dentistry. Criteria for standard assessment of dental health. BASCD Trainers Pack for Caries Prevalence Studies 1992-93.* Dundee: University of Dundee, 1992.

Updated: June 2011

Oral health in children: the Care index

Purpose:

To provide standardised, information about dental decay levels among child age cohorts using population representative random samples.

Definition of indicator and its variants:

The percentage of teeth previously decayed or currently decayed that were treated by filling, *i.e.* an index of the extent to which dental decay has been successfully treated by restorative techniques.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Filled teeth as percent of decayed/missing/filled teeth	P	5 12	E, GOR, SHA, LA, PCO E, GOR, SHA, LA, PCO	AY 2007/08 AY 2008/09		40I_123PCP1_08_V2 40I_123PCP2_09_V1

Numerator:

Numerator data - Number of filled teeth in the survey sample of children in the respective academic year.

Source of numerator data - NHS Dental Epidemiology Programme undertaken by Primary Care Organisations and co-ordinated by The Dental Observatory and NWPHO with standardisation by the British Society for the Study of Community Dentistry.

Comments on numerator data - The data for 5 year olds relate to deciduous (milk) teeth (ft), and the data for 12 year olds relate to permanent teeth (FT).

Currently, the North West Public Health Observatory / The Dental Observatory (NWPHO / TDO) have taken on responsibility for the English co-ordination of dental epidemiological surveys and released 2007/08 data for five year olds as the first data set published under their auspices and more recently 2008/09 data for twelve year olds. For more details see: http://www.nwph.net/dentalhealth/

Denominator:

Denominator data - Number of decayed/missing/filled teeth in the survey sample of children.

Source of denominator data - Office for National Statistics (ONS) Single Year of Age mid year estimates.

Comments on denominator data - The data source is a series of nationally co-ordinated dental epidemiological surveys commissioned by individual Health Authorities to standardised national protocols and diagnostic standards (see "Further reading") and involving the dental examination of children in the specified age-group, in state schools. The data source is part of a cycle of nationally co-ordinated dental epidemiological surveys as outlined in *Health Service Guidelines* (93)25.

Historically, the nationally co-ordinated programme consisted of a study of dental decay in the milk teeth of five year old children undertaken in alternate academic years with surveys of the permanent teeth of twelve year olds and of 14 year olds undertaken at four-yearly intervals and fitting into the years between surveys of five year olds. However, in 2006/07 academic year it was decided that there was limited value in surveying 14 year olds, mainly because of major difficulties in some areas in obtaining access to that age group. Consequently, 14 year olds have been now removed from the survey cycle.

The data relate to children attending state schools in an area. National minimum standards are set for the random sampling of children to obtain a sample representative of the age-group in the area. Many Health Authorities commission larger samples in order to obtain data on intra-district variations in dental caries for local planning purposes.

Data are collected locally and collated by The Dental Observatory. Summary data are reported by NWPHO and are also available via BASCD and the society's journal Community Dental Health.

Statistical methods:

The national and sub-national figures for the most recent surveys of 5 and 12 year olds are weighted by deprivation quintile and, where necessary, sample size.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Due to changes in the method of obtaining consent the survey of 5 year olds conducted in 2007/08 should not be used for backwards comparison. There is clear evidence of bias but the measurement of this is not possible and varies from one sample to another. The source data has clear caveats about the use of this dataset and should be referred to, along with statements made about the dataset at :
http://www.nwph.info/dentalhealth/reports/Statements_re_NHS_DEP_5_yr_olds_2007_08.pdf

Further reading:

1. NHS Dental Epidemiology Programme for England. Oral Health Survey of 12 year old Children 2008 / 2009. *Summary of caries prevalence and severity results.* NWPHO / TDO. November 2010. Available at: http://www.nwph.net/dentalhealth/reports/Report_NHS_DEP_for_England_OH_Survey_12yr_2008-09.pdf
2. NHS Dental Epidemiology Programme. Oral Health Survey of 12 year old children in England 2008/2009. *National protocol.* January 2009. Available at: http://www.nwph.net/dentalhealth/reports/National_Protocol_for_2008_09_12%20yr%20olds.pdf
3. NHS Dental Epidemiology Programme for England. Oral Health Survey of 5 year old Children. *Summary report.* NWPHO / TDO. October 2009. Available at: http://www.nwph.net/dentalhealth/reports/NHS_DEP_for_England_OH_Survey_5yr_2007-08_Report.pdf
4. Mitropoulos C, Pitts NB, Deery C. *British Association for the Study of Community Dentistry. Criteria for standard assessment of dental health. BASCD Trainers Pack for Caries Prevalence Studies 1992-93.* Dundee: University of Dundee, 1992.

Updated: June 2011

Fertility

Purpose:

To measure fertility.

Definition of indicator and its variants:

The general fertility rate is the number of live births per 1,000 females of childbearing age between 15-44.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of live births by maternal age	F	11+, 11-15, 16-19, 20-24, 25-34, 35-39, 40+	E&W, E,GOR, ONS area, SHA, LA, PCO, CTY	2009		05A_079NO_09_V1
General fertility rate	F	11-49	E&W, E,GOR, ONS area, SHA, LA, PCO, CTY	2009		05A_079CR_09_V1
Total period fertility rate (TPFR)	F	11-49	E&W, E,GOR, ONS area, SHA, LA, PCO, CTY	2009		05A_079DR_09_V1

Numerator:

Numerator data - Live births occurring to females aged 11 years and over in the respective calendar year.

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data - None.

Denominator:

Denominator data - 2001 Census based mid-year female population estimates (aged 15-44) for the respective calendar year.

Source of denominator data - ONS.

Comments on denominator data - The population figures used are ONS mid-year estimates for 2007 derived from the 2001 Census, with allowance for subsequent births, deaths, migration, and ageing of the population.

The figures for general and total period fertility rates may differ from those published by ONS in VS1, which were computed using population figures for a previous year.

Statistical methods:

The total period fertility rate is calculated as the sum of the age-specific fertility rates (five-year age groups) between ages 15-44, multiplied by 5. For the first and last age groups the numerators are taken as births to women aged under 20, and births to women aged 40 and over, respectively. In calculating general fertility rates, it is assumed that births are occurring to females aged 11-49. This is because births to women over 49 are very rare.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. *Statistical Bulletin - Births and deaths in England and Wales, 2009.* November 2010. Available at: http://www.statistics.gov.uk/pdfdir/bdths0710.pdf
2. Office for National Statistics. *Statistical Bulletin - Births and deaths in England and Wales, 2008.* May 2009. Available at: http://www.statistics.gov.uk/pdfdir/bdths0509.pdf

3. Department of Health. *National Service Framework for Children, Young People and Maternity Services – Emerging findings*. London: Department of Health, 2003.
4. Department of Health. *National Service Framework for Children, Young People and Maternity Services – Standard for Hospital Services*. London: Department of Health, 2003.
5. Troop P, Goldacre M, Mason A, Cleary R (eds). *Health Outcome Indicators: Normal Pregnancy and Childbirth. Report of a working group to the Department of Health*. Oxford: National Centre for Health Outcomes Development, 1999.

Updated: March 2011

Live births in NHS hospitals

Purpose:

To measure what proportion of births occur in NHS hospitals.

Definition of indicator and its variants:

Proportion of all live births which occur in NHS hospitals (and additionally in non-NHS hospitals and at home).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Percent	F	11+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		05B_143PC_09_V1

Numerator:

Numerator data - Number of live births occurring in NHS hospitals and additionally in non-NHS hospitals and at home in the respective calendar year.

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - None.

Denominator:

Denominator data - All live births occurring in the respective calendar year.

Source of denominator data - ONS.

Comments on denominator data - None.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Olsen O, Jewell D. *Home versus hospital birth (Review)*. The Cochrane Library, 2009. Available at: http://onlinelibrary.wiley.com/o/cochrane/clsysrev/articles/CD000352/pdf_fs.html
2. Department of Health. *National Service Framework for Children, Young People and Maternity Services – Emerging findings*. London: Department of Health, 2003.
3. Department of Health. *National Service Framework for Children, Young People and Maternity Services – Standard for Hospital Services*. London: Department of Health, 2003.
4. Troop P, Goldacre M, Mason A, Cleary R (eds). *Health Outcome Indicators: Normal Pregnancy and Childbirth - Report of a working group to the Department of Health*. Oxford: National Centre for Health Outcomes Development, 1999. Available at http://nchod.uhce.ox.ac.uk/pregnancy.pdf

Updated: March 2011

Conceptions

Purpose:

To reduce the number of unwanted pregnancies, particularly in young girls.

Definition of indicator and its variants:

Estimates of conceptions (excluding pregnancies leading to spontaneous abortions), based on pregnancies which lead to a maternity at which one or more live or still births occurs and is registered in England and Wales, or a termination of pregnancy by abortion under the 1967 Act in England and Wales.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number and rate per 1,000	F	<16, <18	E&W, E, GOR, SHA, LA, CTY E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2006-08	2006 2007 2008	05C_138CRP1_08_V1 05C_138CRP2_08_V1

Numerator:

Numerator data - Number of conceptions estimated to have occurred based on birth registrations and legal terminations of pregnancy recorded in the respective calendar years, in these plus the following year (e.g. 2001-2003 estimates are based on 2001-2004 registrations).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Office for National Statistics estimates of conceptions for under 16 and under 18 year olds, *i.e.* in females aged 15 and younger, and 17 and younger, respectively (excluding pregnancies leading to spontaneous abortions), based on pregnancies which lead to a maternity at which one or more live or still birth occurs and is registered in England and Wales, or a termination of pregnancy by abortion under the 1967 Act in England and Wales.

Estimation of conception dates: Dates of conception are not directly available from birth registrations and abortion records. To identify the age group and year in which a conception occurs, the date of conception is estimated as follows:

a) Maternities (one or more live births): 38 weeks is assumed (no gestation is recorded at live birth registration);

b) Maternities (all stillbirths): Recorded gestation less 2 weeks (recorded gestation is time since last menstrual period; conception is assumed to occur 2 weeks after);

c) Abortions under the 1967 Act: Recorded gestation less 2 weeks (recorded gestation is time since last menstrual period; conception is assumed to occur 2 weeks after).

Age at conception is derived from the mother's date of birth and the estimated date of conception. The Office for National Statistics has recently amended the method it uses to estimate age at conception. The changes are small and revised figures are similar to those previously published. The numerator data in this indicator are based on the amended method. Full details of the minor revisions are given in an article in *Population Trends 97* which is available from the Stationery Office.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for ages 13-15 and 15-17 for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - The population figures used are Office for National Statistics revised mid-year estimates for 2006-08 derived from the 2001 Census, with allowance for subsequent births, deaths, migration, and ageing of the population.

Statistical methods:

In calculating conception rates for under 16 and under 18 year olds (including all under 16s), the populations relate to the ages 13-15 and 15-17 years respectively. In the latter case, a three-year age group only is used as the

denominator in the calculation. The reason for this is that the vast majority of conceptions to under 18 year olds occur in this age group. Only about 5% of under 18 conceptions are to girls aged 14 or under and to include younger age groups in the base population would produce misleading results. The 15-17 group is effectively treated as the "population at risk".

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. National Statistics. *Conception statistics. Conceptions for women resident in England and Wales, 2008*. Newport: Office for National Statistics, 2010. Available at: http://www.statistics.gov.uk/downloads/theme_health/conceptions2008/conceptions08.pdf
2. National Statistics. *Statistical Bulletin - Conceptions in England and Wales, 2008*. Office for National Statistics, 23 November 2010. Available at: http://www.statistics.gov.uk/pdfdir/con1110.pdf
3. National Statistics. *Conception statistics. Conceptions for women resident in England and Wales, 2007*. Newport: Office for National Statistics, 2009. Available at: http://www.statistics.gov.uk/downloads/theme_health/conceptions2007/ConceptionsARV2007.pdf
4. National Statistics. *News Release - Conception rate increases among under 18s*, News Release, 26 February 2009. Available at: http://www.statistics.gov.uk/pdfdir/hsq0209.pdf
5. National Statistics. *Conception statistics. Conceptions for women resident in England and Wales, 2006*. Newport: Office for National Statistics, 2008. Available at: http://www.statistics.gov.uk/downloads/theme_health/Conceptions2006/Conception_Statistics_06_web.pdf
6. National Statistics. *Conception statistics. Conceptions for women resident in England and Wales, 2005.* Newport: Office for National Statistics, 2007. Available at: http://www.statistics.gov.uk/downloads/theme_health/Conceptions2005/Conceptions2005.pdf
7. Griffiths C and Kirby L. Geographic variations in conceptions to women aged under 18 in Great Britain during the 1990s. *Office for National Statistics Population Trends*, Vol 102; 2000: 13-23.

Updated: March 2011

Abortions

Purpose:

To reduce the number of unwanted pregnancies.

Definition of indicator and its variants:

Legal terminations of pregnancy.

The abortion rate is the number of abortions (NHS and private) per 1,000 women aged 11-49.

The total period abortion rate is the average number of abortions (NHS and private) that would occur per woman in an area, if women experienced the current age-specific abortion rates of that area throughout their childbearing ages.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number and rate per 1,000 women by maternal age	F	All ages, <18, 18-19, <20, 20-24, 25-29, 30-34, 35+	E&W, E, GOR, SHA, PCO	2009		05D_139CRP1_09_V1
Number and rate for age under 16 per 1,000 girls	F	<16	E&W, E, GOR, SHA, PCO	2006-08		05D_139CRP2_08_V2
Total period abortion rate (TPAR)	F	11-49	E&W, E, GOR, SHA, PCO	2009		05D_139DR_09_V1

Numerator:

Numerator data - Number of abortions (NHS and private) to females aged 11 years and over in the respective calendar year.

Source of numerator data - Department of Health.

Comments on numerator data - Figures for abortions were derived from notification forms returned to the Chief Medical Officer.

Abortion data provided in the *Compendium* have been disclosure controlled at source. For more information and guidance on disclosure issues related to abortion statistics see the advisory report available at http://www.statistics.gov.uk/downloads/theme_health/abortion_stag_final.pdf

Denominator:

Denominator data - 2001 Census based mid-year female population (aged 11-49) estimates for the respective calendar year.

Source of denominator data - Office for National Statistics (ONS).

Comments on denominator data - The population figures used are ONS mid-year estimates for 2008 derived from the 2001 Census with allowance for subsequent births, deaths, migration, and ageing of the population.

Statistical methods:

In calculating abortion rates for all ages, under 18 and 35 and over, the population denominators used now are 15-44, 15-17 and 35-44 respectively which is in line with the rates published by the Department of Health (see Further reading: Statistical Bulletin 2005, footnote in Table 10b). Please note that in the previous *Compendia* rates for all ages, under 18 and 35 and over were based on populations 11-49, 11-17 and 35-49 respectively therefore they are not comparable with the rates currently published.

The total period abortion rate (TPAR) is calculated by multiplying the age-specific abortion rates by the respective number of years in the age group, and summing the results. The age groups used are: 11-17, 18-19, 20-24, 25-29, 30-34 and 35-49.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Government Statistical Service. *Statistical Bulletin - Abortion Statistics, England and Wales: 2009.* Bulletin 2010/01 London: Government Statistical Service, May 2010. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_116336.pdf
2. Government Statistical Service. *Statistical Bulletin - Abortion Statistics, England and Wales: 2008.* Bulletin 2009/01 London: Government Statistical Service, May 2009. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_099714.pdf
3. Government Statistical Service. *Statistical Bulletin - Abortion Statistics, England and Wales: 2007.* Bulletin 2008/01 London: Government Statistical Service, June 2008. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_085545.pdf
4. Government Statistical Service. *Statistical Bulletin - Abortion Statistics, England and Wales: 2006.* Bulletin 2007/01 London: Government Statistical Service, June 2007. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_075705.pdf
5. Government Statistical Service. *Statistical Bulletin - Abortion Statistics, England and Wales: 2005.* Bulletin 2006/01 London: Government Statistical Service, July 2006. Available at: http://www.dh.gov.uk/assetRoot/04/13/68/59/04136859.pdf
6. Government Statistical Service. *Statistical Bulletin - Abortion Statistics, England and Wales: 2004.* Bulletin 2005/11 London: Government Statistical Service, July 2005. Available at: http://www.dh.gov.uk/assetRoot/04/11/75/74/04117574.pdf

Updated: March 2011

Abortions by gestational age

Purpose:

To reduce the number of late abortions.

Definition of indicator and its variants:

Legal terminations of pregnancy by gestational age (under 10 weeks, 9-12 weeks, 13 weeks and over).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Percent	F	All ages	E&W, E, GOR, SHA, PCO	2009		05E_140PC_09_V1

Numerator:

Numerator data - Number of abortions (NHS and private) in the respective calendar year carried out at 0-9 weeks, 10-12 weeks and 13 weeks or more.

Source of numerator data - Department of Health.

Comments on numerator data - Figures for abortions were derived from notification forms returned to the Chief Medical Officer.

Abortion data provided in the *Compendium* have been disclosure controlled at source. For more information and guidance on disclosure issues related to abortion statistics see the advisory report available at http://www.statistics.gov.uk/downloads/theme_health/abortion_stag_final.pdf

Denominator:

Denominator data - Total abortions (NHS and private) with stated gestation weeks in the respective calendar year.

Source of denominator data - Office for National Statistics (ONS).

Comments on denominator data - The total figures do not include "Not Stated" gestation weeks.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Government Statistical Service. *Statistical Bulletin - Abortion Statistics, England and Wales: 2009.* Bulletin 2010/01 London: Government Statistical Service, May 2010. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_116336.pdf
2. Government Statistical Service. *Statistical Bulletin - Abortion Statistics, England and Wales: 2008.* Bulletin 2009/01 London: Government Statistical Service, May 2009. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_099714.pdf
3. Government Statistical Service. *Statistical Bulletin - Abortion Statistics, England and Wales: 2007.* Bulletin 2008/01 London: Government Statistical Service, June 2008. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_085545.pd**f**
4. Government Statistical Service. *Statistical Bulletin - Abortion Statistics, England and Wales: 2006.* Bulletin 2007/01 London: Government Statistical Service, June 2007. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_075705.pdf
5. Government Statistical Service. *Statistical Bulletin - Abortion Statistics, England and Wales: 2005.* Bulletin 2006/01 London: Government Statistical Service, July 2006. Available at: http://www.dh.gov.uk/assetRoot/04/13/68/59/04136859.pdf

Updated: March 2011

Abortions performed in the NHS and privately

Purpose:

To monitor access to abortion services.

Definition of indicator and its variants:

Legal terminations of pregnancy performed in the NHS, by an NHS agency (*i.e.* carried out in the private sector on NHS patients), or privately.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Percent	F	All ages	E&W, E, GOR, SHA, PCO	2009		05F_141PC_09_V1

Numerator:

Numerator data - Number of abortions in the respective calendar year by source of service (NHS, NHS agency, and non-NHS).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Figures for abortions were derived from notification forms returned to the Chief Medical Officer.

Abortion data provided in the *Compendium* have been disclosure controlled at source. For more information and guidance on disclosure issues related to abortion statistics see the advisory report available at http://www.statistics.gov.uk/downloads/theme_health/abortion_stag_final.pdf

Denominator:

Denominator data - Total abortions in the respective calendar year.

Source of denominator data - Department of Health.

Comments on denominator data - See "Comments on numerator data".

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Government Statistical Service. *Statistical Bulletin - Abortion Statistics, England and Wales: 2009.* Bulletin 2010/01 London: Government Statistical Service, May 2010. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_116336.pdf
2. Government Statistical Service. *Statistical Bulletin - Abortion Statistics, England and Wales: 2008.* Bulletin 2009/01 London: Government Statistical Service, May 2009. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_099714.pdf
3. Government Statistical Service. *Statistical Bulletin - Abortion Statistics, England and Wales: 2007.* Bulletin 2008/01 London: Government Statistical Service, June 2008. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_085545.pd**f**
4. Government Statistical Service. *Statistical Bulletin - Abortion Statistics, England and Wales: 2006.* Bulletin 2007/01 London: Government Statistical Service, June 2007. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_075705.pdf
5. Government Statistical Service. *Statistical Bulletin - Abortion Statistics, England and Wales: 2005.* Bulletin 2006/01 London: Government Statistical Service, July 2006. Available at: http://www.dh.gov.uk/assetRoot/04/13/68/59/04136859.pdf

Updated: March 2011

Total period abortion rate as percentage of the potential fertility rate

Purpose:

To reduce the number of unwanted pregnancies.

Definition of indicator and its variants:

Total period abortion rate as percentage of the potential fertility rate, where potential fertility is defined as the sum of the total period abortion rate and the total period fertility rate.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Percent	F	11-49	E&W, E, GOR, SHA, PCO	2009		05H_142PC_09_V1

Numerator:

Numerator data - Total period abortion rate (TPAR) in the respective calendar year.

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - None.

Denominator:

Denominator data - Total period abortion rate (TPAR) plus total period fertility rate (TPFR) in the respective calendar year.

Source of denominator data - Office for National Statistics (ONS).

Comments on denominator data - None.

Statistical methods:

The total period abortion rate is the average number of abortions (NHS and private) that would occur per woman in an area, if women experienced the current age-specific abortion rates of that area throughout their childbearing ages. The total period abortion rate (TPAR) is calculated by multiplying the age-specific abortion rates by the respective number of years in the age group, and summing the results. The age groups used are: 11-17, 18-19, 20-24, 25-29, 30-34, and 35-49.

The total period fertility rate is the average number of live births that would occur per woman in an area, if women experienced the current age-specific fertility rates of that area throughout their childbearing ages. The total period fertility rate is calculated as the sum of the age-specific fertility rates (five year age groups) between ages 15-44, multiplied by 5. For the first and last age groups the numerators are taken as births to women aged under 20, and births to women aged 40 and over, respectively.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Government Statistical Service. *Statistical Bulletin - Abortion Statistics, England and Wales: 2009.* Bulletin 2010/01 London: Government Statistical Service, May 2010. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_116336.pdf
2. Government Statistical Service. *Statistical Bulletin - Abortion Statistics, England and Wales: 2008.* Bulletin 2009/01 London: Government Statistical Service, May 2009. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_099714.pdf

Updated: March 2011

Maternal mortality

Purpose:

To reduce maternal deaths.

Indicator currently under review. The Office for National Statistics (ONS) recommends that time-based (in addition to cause-based) data from the Confidential Enquiry into Maternal Deaths (CEMD) should be used. However, they could not be included in the current *Compendium* because data are still being assessed.

Definition of indicator and its variants:

Maternal mortality (ICD-10 O0-O99).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Indirectly age-standardised mortality ratio (SMR) and number of deaths	F	15-44, <20	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		05I_144SM1544_09_V1 05I_144SM1519_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	F	15-44, <20	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		05I_144DR1544_09_V1 05I_144DR1519_09_V1

Numerator:

Numerator data - Maternal deaths, classified by underlying cause of death (ICD-10 O0-O99), registered in the respective calendar years.

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data – Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

The numbers of deaths are small in subnational areas and rates should be interpreted with caution.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several

organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *National Service Framework for Children, Young People and Maternity Services – Emerging findings*. London: Department of Health, 2003.
2. Department of Health. *National Service Framework for Children, Young People and Maternity Services – Standard for Hospital Services*. London: Department of Health, 2003.
3. Troop P, Goldacre M, Mason A, Cleary R (eds). *Health Outcome Indicators: Normal Pregnancy and Childbirth. Report of a working group to the Department of Health*. Oxford: National Centre for Health Outcomes Development, 1999. Available at: http://nchod.uhce.ox.ac.uk/pregnancy.pdf
4. Lewis G. *Why Mothers Die 1997-1999. The Confidential Enquiries into Maternal Deaths in the United Kingdom. The Fifth Report of the CEMD.* London: RCOG Press, 2001.

Updated: March 2011

Hospital episodes (admissions): accidents

Purpose:

To reduce serious accidental injury. The directly age-standardised admission rate for accidents in persons of all ages is a target indicator in the *Saving Lives: Our Healthier Nation strategy* (see "Further reading"). The target is a 10% reduction by the year 2010 from the baseline rate in 1995/96.

Definition of indicator and its variants:

Hospital admissions for serious accidental injury, with a length of stay exceeding 3 days (ICD-10 primary diagnosis in the range S00 through T98X *and* external cause code in the following ranges: V01-V99, W00-X59, Y40-Y84).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Directly age-standardised hospital episode rate per 100,000 and number of episodes	MFP	All ages, <5, 5-14, 15-64, 65+, 75+, 85+	E, GOR, ONS area, SHA, LA, PCO, CTY	FY 2008/09	FY 2007/08 FY 2006/07 FY 2005/06 FY 2004/05 FY 2003/04 FY 2002/03 FY 2001/02 FY 2000/01 FY 1999/00 FY 1998/99	22A_182DRP1_09_V1 22A_182DRP2_09_V1 22A_182DRP3_09_V1 22A_182DRP4_09_V1 22A_182DRP5_09_V1 22A_182DRP6_09_V1 22A_182DRP7_09_V1

Numerator:

Numerator data - Hospital admissions (finished consultant episodes with episode order 1) for serious accidental injury, with a length of stay exceeding 3 days in the respective financial years.

Source of numerator data - Hospital Episode Statistics (HES), Department of Health (DH).

Comments on numerator data - HES data for 1995/96 onwards are based on the tenth version of the International Classification of Diseases (ICD). The codes used are derived from the National Health Service Centre for Coding and Classifications (NHSCCC) Tables of Equivalence. The figures for all time periods have been recalculated to Local Authority (LA) boundaries as of April 2009 and Primary Care Organisation (PCO) boundaries as of April 2011.
The finished consultant episodes are taken from 100% HES data (based on primary diagnosis). There may be variation in completeness of hospital records, accuracy of diagnoses, and quality of coding.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years (e.g. data fro FY 1998/99 use mid-year population estimates for 1998).

Source of denominator data – ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Figures are estimates (i.e. adjusted to include estimates of how many injury admissions without a valid cause code relate to unintensional injury, and how many multiepisodes spells exceede 3 days).

Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1.   Department of Health. *Saving Lives: Our Healthier Nation*. London: The Stationery Office, 1999.

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Mortality from accidents

Purpose:

To reduce deaths from accidents. The directly age-standardised mortality rate from accidents for persons of all ages is a target indicator in the *Saving Lives: Our Healthier Nation* strategy (see "Further reading"). The target is a 20% reduction by the year 2010 from the baseline rate in 1995-97.

Definition of indicator and its variants:

Mortality from accidents ICD-10 V01-X59 equivalent to ICD-9 E800-E928 excluding E870-E879.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		22B_022NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		22B_022CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages <5, <15, <75, 5-14, 15-24, 15-64, 65-84, 65+ 75+ 85+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		22B_022SM00++_09_V1 22B_022SM0004_09_V1 22B_022SM0014_09_V1 22B_022SM0074_09_V1 22B_022SM0514_09_V1 22B_022SM1524_09_V1 22B_022SM1564_09_V1 22B_022SM6584_09_V1 22B_022SM65++_09_V1 22B_022SM75++_09_V1 22B_022SM85++_09_V1
		All ages <15, <75, 15-24, 65-84, 65+			1993-09	22B_022SMT00++_09_V1 22B_022SMT0014_09_V1 22B_022SMT0074_09_V1 22B_022SMT1524_09_V1 22B_022SMT6584_09_V1 22B_022SMT65++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages <5, <15, <75, 5-14, 15-24, 15-64, 65-84, 65+ 75+ 85+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		22B_022DR00++_09_V1 22B_022DR0004_09_V1 22B_022DR0014_09_V1 22B_022DR0074_09_V1 22B_022DR0514_09_V1 22B_022DR1524_09_V1 22B_022DR1564_09_V1 22B_022DR6584_09_V1 22B_022DR65++_09_V1 22B_022DR75++_09_V1 22B_022DR85++_09_V1
		All ages#		1995-97#		22B_022DR00++_97_V5
		All ages <15, <75, 15-24, 65-84, 65+			1993-09	22B_022DRT00++_09_V1 22B_022DRT0014_09_V1 22B_022DRT0074_09_V1 22B_022DRT1524_09_V1 22B_022DRT6584_09_V1 22B_022DRT65++_09_V1

Our Healthier Nation baseline

Numerator:

Numerator data - Deaths from accidents, classified by underlying cause of death (ICD-10 V01-X59, ICD-9 E800-E928 exc E870-E879), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data – Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males   All Ages: 1
Females   All Ages: 1

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data – ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population
Annex 6: Goals of *Our Healthier Nation*

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *Saving Lives: Our Healthier Nation*. London: The Stationery Office, 1999.
2. Griffiths C, Rooney C. The effect of the introduction of ICD-10 on trends in mortality from injury and poisoning in England and Wales. *Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 10-21. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf
3. Ward H, Christie N. *Strategic Review of research priorities for accidental injury*. London: Department of Health, 2000.

Updated: March 2011

Mortality from accidental falls

Purpose:

To reduce deaths from accidental falls.

Definition of indicator and its variants:

Mortality from accidental falls (ICD-10 W00-W19 equivalent to ICD-9 E880-888 excluding E887).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		22C_023NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		22C_023CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		22C_023SM00++_09_V1 22C_023SM0074_09_V1
		All ages			1993-09	22C_023SMT00++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		22C_023DR00++_09_V1 22C_023DR0074_09_V1
		All ages			1993-09	22C_023DRT00++_09_V1

Numerator:

Numerator data - Deaths from accidental falls, classified by underlying cause of death (ICD-10 W00-W19, ICD-9 E880-888 excluding E887 adjusted), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data – Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males	0-74yrs: 0.954	75-84yrs: 0.664	85+yrs: 0.418
Females	0-74yrs: 0.767	75-84yrs: 0.544	85+yrs: 0.335

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: The European Standard population
Annex 6: Goals of *Our Healthier Nation*

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Griffiths C, Rooney C*. The effect of the introduction of ICD-10 on trends in mortality from injury and poisoning in England and Wales*. Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 10-21. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf
2. Ward, H. Christie, N. *Strategic Review of research priorities for accidental injury*. London: Department of Health, 2000.

Updated: March 2011

Mortality from skull fracture and intracranial injury

Purpose:

To reduce deaths from fracture of the skull and intracranial injury.

Definition of indicator and its variants:

Mortality from fracture of the skull and intracranial injury (ICD-10 S02, S06, T90.2, T90.5).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <75, 1+, 1-14, 15-24	E&W, E,GOR, ONS area,SHA, LA, PCO, CTY	2007-09		22D_026SM00++_09_V1 22D_026SM0074_09_V1 22D_026SM01++_09_V1 22D_026SM0114_09_V1 22D_026SM1524_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <75, 1+, 1-14, 15-24	E&W, E,GOR, ONS area,SHA, LA, PCO, CTY	2007-09		22D_026DR00++_09_V1 22D_026DR0074_09_V1 22D_026DR01++_09_V1 22D_026DR0114_09_V1 22D_026DR1524_09_V1

Numerator:

Numerator data - Deaths from fracture of the skull and intracranial injury, classified by nature of injuries ICD-10 S02, S06, T90.2, T90.5) registered in the respective calendar years.

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data – Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several

organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Griffiths C, Rooney C. The effect of the introduction of ICD-10 on trends in mortality from injury and poisoning in England and Wales. *Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 10-21. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf

Updated: March 2011

Mortality from land transport accidents

Purpose:

To reduce deaths from land transport accidents.

Definition of indicator and its variants:

Mortality from land transport accidents (ICD-10 V01-V89 equivalent to ICD-9 E800-E829). This indicator replaces the motor vehicle traffic accidents (MVTAs) indicator (ICD-9 E810-E819) which does not have equivalent ICD-10 codes.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		22E_175NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		22E_175CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		22E_175SM00++_09_V1 22E_175SM0074_09_V1
		All ages			1993-09	22E_175SMT00++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		22E_175DR00++_09_V1 22E_175DR0074_09_V1
		All ages			1993-09	22E_175DRT00++_09_V1

Numerator:

Numerator data - Deaths from land transport accidents, classified by underlying cause of death (ICD-10 V01-V81, ICD-9 E800-E829), registered in the relevant years.

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data – Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the Office for National Statistics implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the Office for National Statistics also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by ONS. Trend data cannot include years prior to 1993, because ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males   All Ages: 1
Females   All Ages: 1

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: The European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Griffiths C, Rooney C. The effect of the introduction of ICD-10 on trends in mortality from injury and poisoning in England and Wales. *Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 10-21. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf

Updated: March 2011

Major accidents

Purpose:

To reduce serious accidental injury.

Definition of indicator and its variants:

Self-reported non-fatal accidents causing the person to consult a doctor or go to a hospital, excluding some accidents that result in long-term stays in hospitals or other institutions.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Mean and age-standardised mean	MFP	16+	E, GOR, ONS area, SHA, CTY	1999-01		22F_322VSP1_01_V2

Numerator:

Numerator data - The number of major accidents per person in the six months prior to interview among persons aged 16+ in a sample survey of the health of the population of England.

Source of numerator data - Health Survey for England (HSE), commissioned by the Department of Health and since April 2005 The Information Centre for health and social care and carried out by the Joint Health Survey Unit of Social and Community Planning Research and of the Department of Epidemiology and Public Health at University College, London.

Comments on numerator data – Two types of accident were distinguished in the survey: 'major accidents' which included all those about which a doctor was consulted or a hospital was visited, and 'minor accidents' which included all other accidents that caused pain or discomfort for over 24 hours. For 'major accidents', respondents were asked to recall how many such accidents they had had in the six months prior to interview, and in which months these accidents occurred. For the most recent accident only, they were asked to give details about how and where the accident occurred and the disruption it caused in work/school (where applicable) and to normal daily activities. There was a slight underestimate because this part of the survey did not include accidents leading to more than a six months' stay at a hospital or institution. See also: http://www.statistics.gov.uk/STATBASE/ssdataset.asp?vlnk=4449

Denominator:

Denominator data - Respondents (with measurements) aged 16+ in a sample survey of the health of the population of England.

Source of denominator data - See "Numerator data".

Comments on denominator data - The HSE is a series of annual surveys that began in 1991 with the aim of monitoring the health of the population. It was designed to measure health and health related behaviours in adults and children living in private households in England. For each participant, the survey included an interview and a physical examination by a nurse, at which various physical measurements, tests, and samples of blood and saliva were collected. These measurements provided biomedical information about known risk factors associated with disease and objective validation for self-reported health behaviour.

Statistical methods:

The figures have been provided for three-year periods (based on three-year moving averages). No data for single calendar years were available. All calculations of sub-national observed estimates at Government Office Region, ONS area, Strategic Health Authority and County levels, age-standardised rates, confidence intervals and significance tests were carried out by the National Centre for Social Research (see Annex 9 for details).

Because any one respondent may have had more than one accident during the six month reference period for major accidents, comparisons between sub-groups are based upon the mean number of reported accidents over the reference period. Such an approach tends to give very low figures (typically 0.1) so, to aid comparisons, the means for major accidents have been multiplied by a factor of 200 (two six-month periods x 100 persons) to give an annual accident rate per 100 persons.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Non-fatal Accidents. *Official Documents Archive 1 – 1994 to2001*, The Stationery Office. Available at: http://www.archive2.official-documents.co.uk/document/deps/doh/survey01/nfa/nfa07.htm
2. Scholes S, Prescott A and Bajekal M. *Health and lifestyle indicators for Strategic Health Authorities, 1994-2002*, London: National Centre for Social Research, 2004. Available at: http://www.dh.gov.uk/assetRoot/04/07/77/31/04077731.pdf

Updated: June 2008

Years of life lost due to mortality from accidents

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from accidents (ICD-10 V01-X59).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		22H_071CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		22H_071DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from accidents classified by underlying cause of death (ICD-10 V01-X59), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *Saving Lives: Our Healthier Nation*. London: The Stationery Office, 1999.
2. Griffiths C, Rooney C. The effect of the introduction of ICD-10 on trends in mortality from injury and poisoning in England and Wales. *Office for National Statistics Health Statistics Quarterly,* No. 19, 2003: 10-21. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf
3. Ward H, Christie N. *Strategic Review of research priorities for accidental injury*. London: Department of Health, 2000.

Updated: March 2011

Years of life lost due to mortality from accidental falls

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from accidental falls (ICD-10 W00-W19).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		22I_021CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		22I_021DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from accidental falls classified by underlying cause of death (ICD-10 W00-W19), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Griffiths C, Rooney C. The effect of the introduction of ICD-10 on trends in mortality from injury and poisoning in England and Wales*. Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 10-21. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf
2. Ward, H. Christie, N. *Strategic Review of research priorities for accidental injury*. London: Department of Health, 2000.

Updated: March 2011

Years of life lost due to mortality from land transport accidents

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from land transport accidents (ICD-10 V01-V89).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		22J_024CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		22J_024DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from land transport accidents classified by underlying cause of death (ICD-10 V01-V89), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Office for National Statistics. Twentieth Century Mortality Trends in England and Wales. *Office for National Statistics Health Statistics Quarterly*, No. 18, 2003: 5-17. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ18_revised_21Aug03.pdf
2. Brock A, Griffiths C. Trends in the mortality of young adults aged 15-44 in England and Wales, 1961-2001. *Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 22-31. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf

Updated: March 2011

Mortality from asthma

Purpose:

To reduce deaths from asthma.

Definition of indicator and its variants:

Mortality from asthma (ICD-10 J45-46 equivalent to ICD-9 493).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		23A_028NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		23A_028CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, 5-44 All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09	 1993-09	23A_028SM00++_09_V1 23A_028SM0544_09_V1 23A_028SMT00++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, 5-44 All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09	 1993-09	23A_028DR00++_09_V1 23A_028DR0544_09_V1 23A_028DRT00++_09_V1

Numerator:

Numerator data - Deaths from asthma, classified by underlying cause of death (ICD-10 J45-46, ICD-9 493 adjusted), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data – Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males   All Ages: 1
Females   All Ages: 1.056

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Scottish Intercollegiate Guidelines Network / British Thoracic Society. *British guideline on the management of Asthma – a national clinical guideline (revised)*. Edinburgh: Scottish Intercollegiate Guidelines Network, 2009. Available at: http://www.brit-thoracic.org.uk/Portals/0/Clinical Information/Asthma/Guidelines/sign101 revised June 09.pdf
2. Pearson M, Goldacre M, Coles J, Amess M, Cleary R, Fletcher J, Mason A, Dixon P, Eastwood A (eds). *Health Outcome Indicators: Asthma. Report of a working group to the Department of Health*. Oxford: National Centre for Health Outcomes Development, 1999. Available at: http://nchod.uhce.ox.ac.uk/asthma.pdf
3. Prescott-Clarke P, Primatesta P. *Health Survey for England - The Health of Young People '95 - 97*. London: TSO, 1998.
4. World Health Organization pages on asthma : http://www.who.int/topics/asthma/en/

Updated: March 2011

Wheeze or diagnosed asthma

Purpose:

To reduce the prevalence of asthma.

Definition of indicator and its variants:

Adults who have ever had wheezing or whistling in the chest or doctor-diagnosed asthma.

Statistic	Sex	Age group	Organisation	Period		File_worksheet name
			(see glossary)	Current data	Trend data	
Number, percent and age-standardised percent	MFP	16+	E, GOR, ONS area, SHA, CTY		2001	23B_320VSP2_01_V1

Numerator:

Numerator data - The number of persons aged 16 + who had ever had wheezing or whistling in the chest or doctor-diagnosed asthma in a sample survey of the health of the population of England.

Source of numerator data - Health Survey for England (HSE), commissioned by the Department of Health and since April 2005 The Information Centre for health and social care and carried out by the Joint Health Survey Unit of Social and Community Planning Research and of the Department of Epidemiology and Public Health at University College, London.

Comments on numerator data - Wheezing is the most commonly used indicator of asthma in prevalence surveys. Overall 33% of respondents had a history of wheezing and 11% of these were diagnosed asthmatics. A few respondents (1%) who were diagnosed as suffering from asthma reported not to have a history of wheezing.

Denominator:

Denominator data - Respondents aged 16+ in a sample survey of the health of the population of England.

Source of denominator data - See "Numerator data".

Comments on denominator data - The Health Survey for England is a series of annual surveys that began in 1991 with the aim of monitoring the health of the population. It was designed to measure health and health related behaviours in adults and children living in private households in England. For each participant, the survey included an interview and a physical examination by a nurse, at which various physical measurements, tests, and samples of blood and saliva were collected. These measurements provided biomedical information about known risk factors associated with disease and objective validation for self-reported health behaviour.

Statistical methods:

The figures have been provided for three-year periods (based on three-year moving averages) and for calendar years. All calculations of sub-national observed estimates at Government Office Region, ONS area, Strategic Health Authority and County levels, age-standardised rates, confidence intervals and significance tests were carried out by the National Centre for Social Research (see Annex 9 for details).

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Scholes S, Prescott A and Bajekal M. *Health and lifestyle indicators for Strategic Health Authorities, 1994-2002*, London: National Centre for Social Research, 2004. Available at: http://www.dh.gov.uk/assetRoot/04/07/77/31/04077731.pdf
2. Joint Health Surveys Unit, National Centre for Social Research and Department of Epidemiology and Public Health, the Royal Free and University College Medical School, London. *The Health Survey for England - Cardiovascular disease*. London: Her Majesty's Stationery Office, 1998.

Updated: June 2008

Prevalence: asthma and prescribed medication

Purpose:

To ascertain the prevalence of asthma from General Practice records and help ensure high standards of primary health care and treatment delivered to NHS patients.

Asthma is a chronic, episodic disease which is not easy to define. One of the main difficulties in asthma is its variable and intermittent nature. This makes definition of asthma prevalence complex and open to interpretation and opinion. It is a common condition which responds well to appropriate management and which is principally managed in primary care. The diagnosis of asthma is a clinical one and there is no confirmatory diagnostic blood test, radiological investigation or histopathological investigation. In most people, the diagnosis can be corroborated by suggestive changes in lung function tests.

Definition of indicator and its variants:

Proportion of patients with asthma, excluding patients with an asthma diagnosis who have not been prescribed any asthma related drugs in the previous twelve months, in a GP registered population. A proportion of patients with COPD will also have asthma. From 1st April 2006 these patients should be recorded on both the asthma and COPD registers.

Because of the need to focus on patients most likely to benefit from intensive monitoring, the QOF asthma registers exclude patients who have had no prescription for asthma drugs during the last 12 months. Such patients may still have a diagnosis of asthma, but may have minimal symptoms not requiring treatment.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		23C_649PC_10_V1

Numerator:

Numerator data - Patients registered with GP practices with a coded diagnosis of asthma, excluding patients with asthma who have been prescribed no asthma-related drugs in the previous 12 months.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

Denominator:

Denominator data - All patients registered with GP practices (total practice list size).

Source of denominator data - See "Numerator data".

Comments on denominator data - The practice list sizes are supplied to QMAS from the National Health Applications and Infrastructure Services (NHAIS).

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool.

It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

From 2009 onwards, National Prevalence Day has been moved to 31st March (previously 14th February) so that prevalence is calculated on the same basis as disease registers for indicator denominators.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
4. NHS Employers and General Practitioners Committee BMA. *Quality and Outcomes Framework guidance for GMS contract 2008/09*, April 2008. Available at: http://www.nhsemployers.org/SiteCollectionDocuments/QUALITY_OUT_COMPLETE_CD_110209.pdf
5. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Statistics for England 2007/08*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2007-08/QOF%20200708%20Statistical%20Bulletin.pdf
6. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07, 2007*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf
7. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework or England 2005/06, 2007*. Available at: http://www.ic.nhs.uk/webfiles/publications/qof/NationalQualityOutcomesFramework280906_PDF.pdf
8. The Health and Social Care Information Centre, *National Quality and Outcomes Framework Statistics for England 2004/05*. London: Bulletin, Available at: http://www.ic.nhs.uk/webfiles/publications/qof0405/QOF0405_Statistical_Bulletin.pdf
9. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68
10. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
11. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf
12. Lung & Asthma Information Agency, Estimating the prevalence of asthma: QOF v Health Survey for England, 2006. Available at: http://www.laia.ac.uk/QOF.htm

Updated: June 2011

Prevalence: asthma with measures of variability or reversibility

Purpose:

To ascertain the prevalence of asthma from General Practice records and help ensure high standards of primary health care and treatment delivered to NHS patients.

Accurate diagnosis is fundamental in order to avoid untreated symptoms as a result of under-diagnosis, and inappropriate treatment as a result of over-diagnosis. Measurements of airflow limitation, its reversibility and its variability are considered useful in establishing a clear diagnosis of asthma.

Definition of indicator and its variants:

Proportion of patients aged eight and over diagnosed as having asthma with measures of variability or reversibility.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	8+	E, GOR, SHA, PCO	FY 2009/10		23D_673PC_10_V1

Numerator:

Numerator data - Patients on the asthma register (diagnosed after 1st April 2006) whose diagnosis has been confirmed by spirometry or peak expiratory flow rate carried out at any time after and up to three months before a diagnosis was recorded.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the asthma register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- aged under eight years;
- asthma diagnosis recorded before 1st April 2006;
- registered in the three months before the reference date;
- asthma exception reported in the 15 months before the reference date;
- asthma diagnosis recorded in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
4. NHS Employers and General Practitioners Committee BMA. *Quality and Outcomes Framework guidance for GMS contract 2008/09*, April 2008. Available at: http://www.nhsemployers.org/SiteCollectionDocuments/QUALITY_OUT_COMPLETE_CD_110209.pdf
5. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Statistics for England 2007/08*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2007-08/QOF%20200708%20Statistical%20Bulletin.pdf
6. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf
7. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework or England 2005/06.* Available at: http://www.ic.nhs.uk/webfiles/publications/qof/NationalQualityOutcomesFramework280906_PDF.pdf
8. The Health and Social Care Information Centre, *National Quality and Outcomes Framework Statistics for England 2004/05*. Available at: http://www.ic.nhs.uk/webfiles/publications/qof0405/QOF0405_Statistical_Bulletin.pdf
9. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68
10. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
11. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf
12. Lung & Asthma Information Agency, Estimating the prevalence of asthma: QOF v Health Survey for England, 2006. Available at: http://www.laia.ac.uk/QOF.htm

Updated: June 2011

Asthma review among patients with asthma

Purpose:

To help reduce the level of risk to health for NHS patients with asthma and ensure high standards of primary health care and treatment delivered to them.

Structured care has been shown to produce benefits for patients with asthma. Although there is good evidence on the use of personalised asthma plans in secondary care, there is very limited evidence in primary care. A typical asthma review should include assessing symptoms, measuring peak flow, assessing inhaler technique and considering a personalised asthma plan. It is recognised that a significant number of patients with asthma do not regularly attend for review.

Definition of indicator and its variants:

Proportion of patients on the asthma register who have had an asthma review in the last 15 months.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		23F_652PC_10_V1

Numerator:

Numerator data - Patients on the asthma register who have had an asthma review in the 15 months before the reference date.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the asthma register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the three months before the reference date;
- asthma exception reported in the 15 months before the reference date;
- asthma diagnosis recorded in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
4. NHS Employers and General Practitioners Committee BMA. *Quality and Outcomes Framework guidance for GMS contract 2008/09*, April 2008. Available at: http://www.nhsemployers.org/SiteCollectionDocuments/QUALITY_OUT_COMPLETE_CD_110209.pdf
5. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Statistics for England 2007/08*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2007-08/QOF%20200708%20Statistical%20Bulletin.pdf
6. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07.* Available at: http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf
7. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework or England 2005/06.* Available at: http://www.ic.nhs.uk/webfiles/publications/qof/NationalQualityOutcomesFramework280906_PDF.pdf
8. The Health and Social Care Information Centre, *National Quality and Outcomes Framework Statistics for England 2004/05*. Available at: http://www.ic.nhs.uk/webfiles/publications/qof0405/QOF0405_Statistical_Bulletin.pdf
9. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68
10. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
11. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf
12. Lung & Asthma Information Agency, Estimating the prevalence of asthma: QOF v Health Survey for England, 2006. Available at: http://www.laia.ac.uk/QOF.htm

Updated: June 2011

Years of life lost due to mortality from asthma

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from asthma (ICD-10 J45-J46).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		23H_027CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		23H_027DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from asthmaclassified by underlying cause of death (ICD-10 J45-J46), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Scottish Intercollegiate Guidelines Network / British Thoracic Society. *British guideline on the management of Asthma – a national clinical guideline (revised)*. Edinburgh: Scottish Intercollegiate Guidelines Network, 2009. Available at: http://www.brit-thoracic.org.uk/Portals/0/Clinical Information/Asthma/Guidelines/sign101 revised June 09.pdf
2. Pearson M, Goldacre M, Coles J, Amess M, Cleary R, Fletcher J, Mason A, Dixon P, Eastwood A (eds). *Health Outcome Indicators: Asthma. Report of a working group to the Department of Health*. Oxford: National Centre for Health Outcomes Development, 1999. Available at http://nchod.uhce.ox.ac.uk/asthma.pdf
3. Prescott-Clarke P, Primatesta P. *Health Survey for England - The Health of Young People '95 - 97*. London: TSO, 1998.
4. World Health Organization pages on asthma : http://www.who.int/topics/asthma/en/

Updated: March 2011

Mortality from bronchitis and emphysema

Purpose:

To reduce deaths from bronchitis and emphysema.

Definition of indicator and its variants:

Mortality from bronchitis and emphysema (ICD-10 J40-J43 equivalent to ICD-9 490-492). This indicator is included for continuity with previous Compendia. However, it is recommended that the new indicator 'mortality from bronchitis, emphysema and other chronic obstructive pulmonary disease' be used instead, especially when analysing trend data.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		24A_037NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		24A_037CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <75 All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09	1993-09	24A_037SM00++_09_V1 24A_037SM0074_09_V1 24A_037SMT00++_09_V1
Directly age-standardised mortality rate per 100,000 and numbers of deaths	MFP	All ages, <75 All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09	1993-09	24A_037DR00++_09_V1 24A_037DR0074_09_V1 24A_037DRT00++_09_V1

Numerator:

Numerator data - Deaths from bronchitis and emphysema, classified by underlying cause of death (ICD-10 J40-J43, ICD-9 490-492 adjusted), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data – Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males   All Ages: 0.66
Females   All Ages: 0.787

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Relevant National initiatives:

1. NHS Scotland. A smoking cessation policy for Scotland. Health Education Board for Scotland, ASH Scotland

Further reading:

1. World Health Organization. *Tobacco-Free Initiative*. Geneva: World Health Organization, 2005. Available at:
    http://www.who.int/tobacco/en/
2. British Heart Foundation. *Stopping Smoking: evidence-based guidance*. British Heart Foundation, 2001.
3. Department of Health. *The Expert Patient: New Approaches to Chronic Disease Management for the 21st Century*. London: Department of Health, 2001. Available at:
    http://www.dh.gov.uk/assetRoot/04/10/27/61/04102761.pdf
4. World Bank. *Economics of Tobacco Control*. Washington: World Bank, 1999.

Updated: March 2011

Mortality from bronchitis, emphysema and other chronic obstructive pulmonary disease

Purpose:

To reduce deaths from bronchitis, emphysema and other chronic obstructive pulmonary disease.

Definition of indicator and its variants:

Mortality from bronchitis and emphysema and other chronic obstructive pulmonary disease (ICD-10 J40-J44 equivalent to ICD-9 490-492, 496). This is a new indicator included from the December 2006 Compendium release and is designed to replace the previous indicator 'mortality from bronchitis and emphysema' .

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		24B_038NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		24B_038CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and numbers of deaths	MFP	All ages, <75 All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09	1993-09	24B_038SM00++_09_V1 24B_038SM0074_09_V1 24B_038SMT00++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <75 All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09	1993-09	24B_038DR00++_09_V1 24B_038DR0074_09_V1 24B_038DRT00++_09_V1

Numerator:

Numerator data - Deaths from bronchitis, emphysema and other chronic obstructive pulmonary disease, classified by underlying cause of death (ICD-10 J40-J44, ICD-9 490-492, 496 adjusted), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data – Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males   All Ages: 1.035
Females   All Ages: 1.035

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Relevant National initiatives:

1. NHS Scotland. A smoking cessation policy for Scotland. Health Education Board for Scotland, ASH Scotland

Further reading:

1. World Health Organization. *Tobacco-Free Initiative*. Geneva: World Health Organization, 2005. Available at: http://www.who.int/tobacco/en/
2. British Heart Foundation. *Stopping Smoking: evidence-based guidance*. British Heart Foundation, 2001.
3. Department of Health. *The Expert Patient: New Approaches to Chronic Disease Management for the 21st Century*. London: Department of Health, 2001. Available at: http://www.dh.gov.uk/assetRoot/04/10/27/61/04102761.pdf
4. World Bank. *Economics of Tobacco Control*. Washington: World Bank, 1999.

Updated: March 2011

Prevalence: chronic obstructive pulmonary disease

Purpose:

To ascertain the prevalence of chronic obstructive pulmonary disease (COPD) from General Practice records and help ensure high standards of primary health care and treatment delivered to NHS patients.

COPD is a common disabling condition with a high mortality. A diagnosis of COPD should be considered in any patient who has symptoms of persistent cough, sputum production, dyspnoea, and/or a history of exposure to risk factors for the disease.

The majority of patients with COPD are managed by general practitioners and members of the primary healthcare team with onward referral to secondary care when required.

The most effective treatment is smoking cessation.

Definition of indicator and its variants:

Proportion of patients with COPD in a GP registered population.

Where patients have co-existing COPD and asthma then they should be on both disease registers. Approximately 15 per cent of patients with COPD will also have asthma.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		24C_634PC_10_V1

Numerator:

Numerator data - Patients registered with GP practices with a coded diagnosis of COPD.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

Denominator:

Denominator data - All patients registered with GP practices (total practice list size).

Source of denominator data - See "Numerator data".

Comments on denominator data - The practice list sizes are supplied to QMAS from the National Health Applications and Infrastructure Services (NHAIS).

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

From 2009 onwards, National Prevalence Day has been moved to 31st March (previously 14th February) so that prevalence is calculated on the same basis as disease registers for indicator denominators.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
4. NHS Employers and General Practitioners Committee BMA. *Quality and Outcomes Framework guidance for GMS contract 2008/09*, April 2008. Available at: http://www.nhsemployers.org/SiteCollectionDocuments/QUALITY_OUT_COMPLETE_CD_110209.pdf
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9. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68
10. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
11. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf

Updated: June 2011

Prevalence: chronic obstructive pulmonary disease confirmed by spirometry

Purpose:

To ascertain the prevalence of chronic obstructive pulmonary disease (COPD) from General Practice records and help ensure high standards of primary health care and treatment delivered to NHS patients.

Where patients have a long standing diagnosis of COPD and the clinical picture is clear, it would not be essential to confirm the diagnosis by spirometry. However, where there is doubt about the diagnosis, spirometry may be carried out for confirmation.

Definition of indicator and its variants:

Proportion of all patients for whom the diagnosis has been confirmed by post bronchodilator spirometry.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		24D_635PC_10_V1

Numerator:

Numerator data - Patients on the COPD register (diagnosed after 1st April 2008) with a record of a post bronchodilator spirometry undertaken at any time between three months before and 12 months after a diagnosis is recorded.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

There have been some definitional changes in 2008/09 which have affected the data for this indicator. The spirometry has been made more explicit in asking for post bronchodilator. The changes apply to new diagnoses from 1st April 2008. For more details see 'Changes to Quality and Outcomes Framework for 2008' available at: http://www.nhsemployers.org/SiteCollectionDocuments/27_3_08_Proposed_Changes_to_Quality_and_Outcomes_Framework_for_2008__FINAL_CD_110209.pdf

Denominator:

Denominator data - All patients on the COPD register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- COPD diagnosis not recorded
- COPD diagnosis recorded before 1st April 2008;
- registered in the three months before the reference date;
- COPD exception reported in the 15 months before the reference date;
- spirometry exception reported in the 15 months before the reference date
- COPD diagnosis recorded in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for

the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
4. NHS Employers and General Practitioners Committee BMA. *Quality and Outcomes Framework guidance for GMS contract 2008/09*, April 2008. Available at: http://www.nhsemployers.org/SiteCollectionDocuments/QUALITY_OUT_COMPLETE_CD_110209.pdf
5. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Statistics for England 2007/08*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2007-08/QOF%20200708%20Statistical%20Bulletin.pdf
6. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf
7. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework or England 2005/06.* Available at: http://www.ic.nhs.uk/webfiles/publications/qof/NationalQualityOutcomesFramework280906_PDF.pdf
8. The Health and Social Care Information Centre, *National Quality and Outcomes Framework Statistics for England 2004/05*. Available at: http://www.ic.nhs.uk/webfiles/publications/qof0405/QOF0405_Statistical_Bulletin.pdf
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10. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
11. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf

Updated: June 2011

FeV$_1$ checks for patients with chronic obstructive pulmonary disease

Purpose:

To help reduce the level of risk to health for NHS patients with chronic obstructive pulmonary disease (COPD) and ensure high standards of primary health care and treatment delivered to them.

There is a gradual deterioration in lung function in patients with COPD. This deterioration accelerates with the passage of time. There are important interventions which can improve quality of life in patients with severe COPD. It is therefore important to monitor respiratory function in order to identify patients who might benefit from pulmonary rehabilitation or continuous oxygen therapy.

Definition of indicator and its variants:

Proportion of patients with COPD with a record of a FeV$_1$ test (forced expiratory volume in 1 second) in the previous 15 months. COPD is diagnosed if patient has an FeV$_1$ of less than 80 per cent of predicted normal and has an FeV$_1$/FVC ratio of less than 70 per cent and the patient has symptoms consistent with COPD.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		24F_637PC_10_V1

Numerator:

Numerator data - Patients on the COPD register with a record of a FeV$_1$ test undertaken in the 15 months before the reference date.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the COPD register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the three months before the reference date;
- COPD exception reported in the 15 months before the reference date;
- COPD diagnosis recorded in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
4. NHS Employers and General Practitioners Committee BMA. *Quality and Outcomes Framework guidance for GMS contract 2008/09*, April 2008. Available at: http://www.nhsemployers.org/SiteCollectionDocuments/QUALITY_OUT_COMPLETE_CD_110209.pdf
5. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Statistics for England 2007/08*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2007-08/QOF%20200708%20Statistical%20Bulletin.pdf
6. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07.* Available at: http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf
7. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework or England 2005/06.* Available at: http://www.ic.nhs.uk/webfiles/publications/qof/NationalQualityOutcomesFramework280906_PDF.pdf
8. The Health and Social Care Information Centre, *National Quality and Outcomes Framework Statistics for England 2004/05*. Available at: http://www.ic.nhs.uk/webfiles/publications/qof0405/QOF0405_Statistical_Bulletin.pdf
9. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68
10. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
11. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf

Updated: June 2011

COPD review among patients with chronic obstructive pulmonary disease

Purpose:

To help reduce the level of risk to health for NHS patients with chronic obstructive pulmonary disease (COPD) and ensure high standards of primary health care and treatment delivered to them.

COPD is increasingly recognised as a treatable disease with large improvements in symptoms, health status, exacerbation rates and even mortality if managed appropriately.

In making assessments of the patient's condition as part of an annual review and when considering management changes it is essential that health care professionals are aware of
- current lung function;
- exacerbation history;
- degree of breathlessness (MRC dyspnoea scale).

A tool such as the Clinical COPD Questionnaire could be used to assess current health status.

There is evidence that inhaled therapies can improve the quality of life in some patients with COPD. However, there is evidence that patients require training in inhaler technique and that such training requires reinforcement. Where a patient is prescribed an inhaled therapy their technique should be assessed during any review. The MRC dyspnoea scale gives a measure of breathlessness and is recommended as part of the regular review.

Definition of indicator and its variants:

Proportion of patients with COPD who have had a review, undertaken by a health care professional, including an assessment of breathlessness using MRC dyspnoea score in the preceding 15 months.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		24G_638PC_10_V1

Numerator:

Numerator data - All patients on the COPD register who have had a review of their COPD which included an assessment of breathlessness using the MRC dyspnoea score in the 15 months before the reference date.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

There have been some definitional changes in 2009/10 which have affected the data for this indicator. For more details see 'QOF Changes and New Indicators for 2009/10' available at:
http://www.bma.org.uk/images/QOFchanges200910_tcm41-178932.pdf

Denominator:

Denominator data - Patients on the COPD register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the three months before the reference date;
- COPD exception reported in the 15 months before the reference date;
- COPD diagnosis recorded in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
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4. NHS Employers and General Practitioners Committee BMA. *Quality and Outcomes Framework guidance for GMS contract 2008/09*, April 2008. Available at: http://www.nhsemployers.org/SiteCollectionDocuments/QUALITY_OUT_COMPLETE_CD_110209.pdf
5. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Statistics for England 2007/08*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2007-08/QOF%20200708%20Statistical%20Bulletin.pdf
6. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf
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9. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68
10. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
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Updated: June 2011

Vaccination: influenza, for patients with chronic obstructive pulmonary disease

Purpose:

To help reduce the level of risk to health for NHS patients with chronic obstructive pulmonary disease (COPD) and ensure high standards of primary health care and treatment delivered to them.

The Department of Health and the Joint Committee on Vaccination and Immunisation currently recommend influenza vaccination for patients with COPD.

Definition of indicator and its variants:

Proportion of patients on the COPD register who have had an influenza vaccination administered.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		24H_639PC_10_V1

Numerator:

Numerator data - Patients on the COPD register who have a record of influenza vaccination in the relevant period (in the preceding 1st September to 31st March), unless contraindications or side-effects are recorded.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the COPD register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the three months before the reference date;
- COPD exception reported in the 15 months before the reference date;
- COPD diagnosis recorded in the three months before the reference date;
- persistent influenza vaccination contraindications recorded;
- expiring influenza vaccination contraindications recorded in the 15 months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
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7. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework or England 2005/06.* Available at: http://www.ic.nhs.uk/webfiles/publications/qof/NationalQualityOutcomesFramework280906_PDF.pdf
8. The Health and Social Care Information Centre, *National Quality and Outcomes Framework Statistics for England 2004/05*. Available at: http://www.ic.nhs.uk/webfiles/publications/qof0405/QOF0405_Statistical_Bulletin.pdf
9. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68
10. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
11. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf

Updated: June 2011

Years of life lost due to mortality from bronchitis and emphysema

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from bronchitis and emphysema (ICD-10 J40-J43).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		24I_031CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		24I_031DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from bronchitis and emphysema classified by underlying cause of death (ICD-10 J40-J43), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Relevant National initiatives:

1.   NHS Scotland. A smoking cessation policy for Scotland. Health Education Board for Scotland, ASH Scotland

Further reading:

1.   World Health Organization. *Tobacco-Free Initiative*. Geneva: World Health Organization, 2005. Available at: http://www.who.int/tobacco/en/
2.   British Heart Foundation. *Stopping Smoking: evidence-based guidance*. British Heart Foundation, 2001.
3.   Department of Health. *The Expert Patient: New Approaches to Chronic Disease Management for the 21st Century*. London: Department of Health, 2001. Available at: http://www.dh.gov.uk/assetRoot/04/10/27/61/04102761.pdf
4.   World Bank. *Economics of Tobacco Control*. Washington: World Bank, 1999.

Updated: March 2011

Years of life lost due to mortality from bronchitis, emphysema and other chronic obstructive pulmonary disease

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from bronchitis, emphysema and other chronic obstructive pulmonary disease (ICD-10 J40-J44).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		24J_032CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		24J_032DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from bronchitis, emphysema and other chronic obstructive pulmonary disease classified by underlying cause of death (ICD-10 J40-J44), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Relevant National initiatives:

1. NHS Scotland. A smoking cessation policy for Scotland. Health Education Board for Scotland, ASH Scotland

Further reading:

1. World Health Organization. *Tobacco-Free Initiative*. Geneva: World Health Organization, 2005. Available at: http://www.who.int/tobacco/en/
2. British Heart Foundation. *Stopping Smoking: evidence-based guidance*. British Heart Foundation, 2001.
3. Department of Health. *The Expert Patient: New Approaches to Chronic Disease Management for the 21st Century*. London: Department of Health, 2001. Available at: http://www.dh.gov.uk/assetRoot/04/10/27/61/04102761.pdf
4. World Bank. *Economics of Tobacco Control*. Washington: World Bank, 1999.

Updated: March 2011

Incidence of all cancers

Purpose:

To reduce the incidence of all cancers.

Definition of indicator and its variants:

Registrations for all cancers excluding skin cancers other than malignant melanoma (ICD-10 C00-C97 exc C44, equivalent to ICD-9 140-208 exc 173).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Indirectly age-standardised registration ratio (SRR) and number of registrations	MFP	All ages <75	E&W, E, GOR, ONS area, SHA, LA, PCO	2006-08		11A_077SR00++_08_V1 11A_077SR0074_08_V1
		All ages			1993-08	11A_077SRT00++_08_V1
Directly age-standardised registration rate and number of registrations	MFP	All ages <75	E&W, E, GOR, ONS area, SHA, LA, PCO	2006-08		11A_077DR00++_08_V1 11A_077DR0074_08_V1
		All ages			1993-08	11A_077DRT00++_08_V1

Numerator:

Numerator data - Cancer registrations for all cancers excluding skin cancers other than malignant melanoma (ICD-10 C00-C97 exc C44, equivalent to ICD-9 140-208 exc 173) in the respective calendar years.

Source of numerator data - Regional Cancer Registries and the Office for National Statistics (ONS).

Comments on numerator data - Registration data for years 1993-2005 were extracted by ONS in November 2008. Data for 2006 are as registered by the end of September 2008. The data extracts for 2007 and 2008 are the same as used for the respective ONS Annual Reference Volume (series MB1). For all years 1993 to 2006 organisational codes were assigned using the postcode of usual residence and the August 2008 edition of the National Statistics Postcode Directory. Years 2007 and 2008 used the May 2010 and November 2010 editions respectively. Results in the current *Compendium* may differ from those of previous issues because of changes in methodology to extract data by area, and also because of data enhancements by ONS. Cancer registrations are also continuously being updated retrospectively and ONS records may have been updated since previous analyses. Skin cancers other than malignant melanoma (ICD-10 C44, ICD-9 173) are believed to be greatly under reported. The registration of such cancers varies widely between the regional registries and depends on their ability to access out-patient records and general practioners. Following ONS practice, the figures presented in the Compendium for 'incidence of all cancers' exclude skin cancers other than malignant melanoma.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 3: Explanations of statistical methods used in the *Compendium*

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service.* London: Department of Health, 2004.

2. Department of Health. *Day Surgery: Operational Guide. Waiting, booking and choice.* London: Department of Health, 2002.
3. Kuper H, Boffetta P, Adami H-O. Tobacco use and cancer causation: association by tumour type. *J Intern Med* 2002; 252(3): 206-224.
4. ONS. *Cancer Statistics Registrations - Registrations of cancer diagnosed in 2008, England.* Series MB1 No 39. London: ONS, 2010. Available at: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=8843

Updated: June 2011

Mortality from all cancers

Purpose:

To reduce deaths from cancer. The directly age-standardised mortality rate from all cancers for persons aged under 75 is a target indicator in the *Saving Lives: Our Healthier Nation* strategy (See "Further reading "). The target is a 20% reduction by the year 2010 from the baseline rate in 1995-97.

Definition of indicator and its variants:

Mortality from all malignant neoplasms (ICD-10 C00-C97 equivalent to ICD-9 140-208).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		11B_075NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		11B_075CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <65, <75 65-74	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		11B_075SM00++_09_V1 11B_075SM0064_09_V1 11B_075SM0074_09_V1 11B_075SM6574_09_V1
		All ages, <65, <75 65-74			1993-09	11B_075SMT00++_09_V1 11B_075SMT0064_09_V1 11B_075SMT0074_09_V1 11B_075SMT6574_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <65, <75 65-74	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		11B_075DR00++_09_V1 11B_075DR0064_09_V1 11B_075DR0074_09_V1 11B_075DR6574_09_V1
		<75#		1995-97#		11B_075DR0074_97_V5
		All ages, <65, <75 65-74			1993-09	11B_075DRT00++_09_V1 11B_075DRT0064_09_V1 11B_075DRT0074_09_V1 11B_075DRT6574_09_V1

Our Healthier Nation baseline

Numerator:

Numerator data - Deaths from all malignant neoplasms, classified by underlying cause of death (ICD-10 C00-C97, ICD-9 140-208 adjusted), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data – Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

| Males | 0-74yrs: 1.013 | 75-84yrs: 1.028 | 85+yrs: 1.069 |
| Females | 0-74yrs: 1.009 | 75-84yrs: 1.025 | 85+yrs: 1.05 |

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population
Annex 6: Goals of *Our Healthier Nation*

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Relevant National initiatives:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service.* London: Department of Health, 2004.
2. Department of Health. *NHS Cancer Plan*. London: Department of Health, 2000.
3. NHS Executive. *Manual of Cancer Services Standards*. London: NHS Executive, 2000.
4. Department of Health. *Saving lives: Our Healthier Nation*. London: The Stationery Office, 1999.
5. Department of Health. *Smoking kills – a White Paper on tobacco*. London: The Stationery Office, 1998.
6. Department of Health. *The Health of the Nation: A Policy Assessed*. London: The Stationery Office, 1998.

Further reading:

1. World Health Organization. WHO Framework on Tobacco Control. Geneva: World Health Organization, 2003. Available at: http://www.who.int/tobacco/fctc/text/en/fctc_en.pdf
2. Brock A, Griffiths C. Trends in the mortality of young adults aged 15-44 in England and Wales, 1961-2001. Office for National Statistics Health Statistics Quarterly, No. 19, 2003: 22-31. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf

Updated: March 2011

Deaths at home from all cancers

Purpose:

To improve palliative care and service planning for cancer patients in the terminal stages of life, allowing more of them the choice of dying at home.

Definition of indicator and its variants:

The proportion of deaths from all cancers (ICD-10 C00-C97) that occur at home.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Percent of deaths at home and number of deaths at home	MFP	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		11C_191PC_09_V1
Indirectly age-standardised deaths at home rate per 100 deaths and number of deaths at home	MFP	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		11C_191ISR_09_V1

Numerator:

Numerator data - Deaths at home from all cancers, classified by underlying cause of death (ICD-10 C00-C97), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data – Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

Information about the place of death is found on the mortality record in the communal establishment field. It contains one of:

- a 5 digit code identifying a communal establishment or institution (e.g. hospital, nursing home, residential home);
- an "H" code which indicates that the person is certified as having died at their home address and that this is not a communal establishment or;
- an "E" code which indicates that the person died elsewhere.

The communal establishments are themselves classified into 84 categories (e.g. general hospital, mental nursing home, nursing home etc) and can be further distinguished by whether they are an NHS or Non-NHS establishment.

It is currently ONS practice to include nursing homes with hospitals under a broader group - "Other hospitals and communal establishments for the care of the sick" - and also to include residential homes under "Other communal establishments". This is because of concerns highlighted by the ONS regarding the accuracy of the recorded status of some communal establishments, particularly nursing homes and residential homes.

It is therefore not possible to include nursing home or residential home deaths as a "home" death. For this indicator, a "home" death is defined as one that has the "H" code in the communal establishment field, i.e. where the death has occurred at the home address and that address is not of a communal establishment.

Denominator:

Denominator data - All deaths from all cancers, classified by underlying cause of death (ICD-10 C00-C97), registered in the respective calendar year(s).

Source of denominator data - ONS.

Comments on denominator data - Includes deaths in all categories of communal establishment code, i.e. deaths in all communal establishments, at home, and elsewhere.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*. See Annex 2 for more details.

Statistical methods:

The age-standardised deaths at home rate utilises the indirect method of standardisation. The direct method was found not to be robust as it was affected by small numerator and denominator counts in specific age groups.

Indirect standardisation requires the computation of the ratio of an area's observed number of events to its expected number of events if it had experienced the standard age-specific rates. This age-standardised ratio can be converted into a rate by multiplying it by the crude rate of the standard population.

The standard rates used are those of England for the respective calendar year(s). Male and female rates have been standardised separately. The rate for persons is standardised for both age and sex.

This methodology is similar to that used for the Clinical Indicators and is described in detail in:

Annex 3: Explanations of statistical methods used in the *Compendium* (under the sections entitled "Indirectly Standardised Rates For Clinical Indicators" and "Confidence Intervals Of Indirectly Standardised Rates For Clinical Indicators").

Interpretation of indicators:

Type of Indicator - This is a generic cross-sectional comparative indicator reflecting events which act as a proxy for outcome (quality of dying). In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable areas.

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - 95%. Some of the values and factors influencing them may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of deaths may be small at individual organisational level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% probability, will contain the underlying value of the indicator. If the confidence interval for an organisation's rate is outside the range of the national confidence intervals, the difference between the two rates is considered statistically significant. If the confidence intervals for two rates overlap, in most cases the difference between the rates would not be considered statistically significant.

Effect of Case-Mix / severity - Severity of the cancer and need for hospital care have implications for those who wish to die at home being able to do so. The data available do not allow adjustment for these factors.

Other Potential Confounding Factors - A number of factors outside the control of the NHS such as personal choice, availability of hospices, and family/community support may contribute to the variation shown by the indicator.

Relevant National initiatives:

1. Department of Health. *End of life care strategy : Promoting high quality care for all adults at the end of life*. London: Department of Health , 2008.
   http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_086277
2. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service*. London: Department of Health, 2004.
3. Department of Health. *Pioneering Schemes Named Best of the Best. NHS Beacons – Part of a Concerted Campaign to Improve Cancer Services.* Department of Health, 1999. Press release: reference 1999/0375
4. Commission for Health Improvement. *NHS Cancer Care in England and Wales. National Service Framework Assessments No.1*. London: Commission for Health Improvement, 2001.

Further reading:

1. Higginson I.J, Thompson M. Children and young people who die from cancer: epidemiology and place of death in England (1995-9). *British Medical Journal* 2003; 327: 478-479.
2. Grande GE, Todd CJ, Barclay SIG, Farquhar MC. Does hospital at home for palliative care facilitate death at home? Randomised controlled trial. *British Medical Journal* 1999; 319: 1472-1475.
3. Higginson I.J, Jarman B, Astin P, Dolan S. Do social factors affect where patients die: an analysis of 10 years of cancer deaths in England. *Journal of Public Health Medicine* 1999; 21(1): 23-28.

Updated: March 2011

Years of life lost due to mortality from all cancers

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from all cancers (ICD-10 C00-C97).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		11D_072CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		11D_072DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from all cancers classified by underlying cause of death (ICD-10 C00-C97), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Relevant National initiatives:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service.* London: Department of Health, 2004.
2. Department of Health. *NHS Cancer Plan.* London: Department of Health, 2000.
3. NHS Executive. *Manual of Cancer Services Standards.* London: NHS Executive, 2000.
4. Department of Health. *Saving lives: Our Healthier Nation.* London: The Stationery Office, 1999.
5. Department of Health. *Smoking kills – a White Paper on tobacco.* London: The Stationery Office, 1998.
6. Department of Health. *The Health of the Nation: A Policy Assessed.* London: The Stationery Office, 1998.

Further reading:

1. World Health Organization. WHO Framework on Tobacco Control. Geneva: World Health Organization, 2003. Available at: http://www.who.int/tobacco/fctc/text/en/fctc_en.pdf
2. Brock A, Griffiths C. Trends in the mortality of young adults aged 15-44 in England and Wales, 1961-2001. Office for National Statistics Health Statistics Quarterly, No. 19, 2003: 22-31. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf

Updated: March 2011

Prevalence: all cancers

Purpose:

To ascertain the prevalence of cancer cases from General Practice records and help ensure appropriate care and follow-up for NHS patients with a diagnosis of cancer.

The principal active management of cancers occurs in the secondary care setting. General practitioners often have a key role in the referral and subsequently in providing a support role and in ensuring that care is appropriately co-ordinated.

Definition of indicator and its variants:

Proportion of patients with a diagnosis of cancer excluding non-melanotic skin cancers in a GP registered population.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		11E_676C_10_V1

Numerator:

Numerator data - Patients registered with GP practices with a coded diagnosis of cancer excluding non-melanotic skin cancers from 1st April 2003.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

Denominator:

Denominator data - All patients registered with GP practices (total practice list size).

Source of denominator data - See "Numerator data".

Comments on denominator data - The practice list sizes are supplied to QMAS from the National Health Applications and Infrastructure Services (NHAIS).

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

From 2009 onwards, National Prevalence Day has been moved to 31st March (previously 14th February) so that prevalence is calculated on the same basis as disease registers for indicator denominators.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf

2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf

3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf

4. NHS Employers and General Practitioners Committee BMA. *Quality and Outcomes Framework guidance for GMS contract 2008/09*, April 2008. Available at: http://www.nhsemployers.org/SiteCollectionDocuments/QUALITY_OUT_COMPLETE_CD_110209.pdf

5. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Statistics for England 2007/08*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2007-08/QOF%20200708%20Statistical%20Bulletin.pdf

6. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07.* Available at: http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf

7. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework or England 2005/06.* Available at: http://www.ic.nhs.uk/webfiles/publications/qof/NationalQualityOutcomesFramework280906_PDF.pdf

8. The Health and Social Care Information Centre, *National Quality and Outcomes Framework Statistics for England 2004/05*. Available at: http://www.ic.nhs.uk/webfiles/publications/qof0405/QOF0405_Statistical_Bulletin.pdf

9. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68

10. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf

11. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf

12. Patient UK., *Looking After People With Cancer*. Available at: http://www.patient.co.uk/showdoc/40002159/

Updated: June 2011

Incidence of bladder cancer

Purpose:

To reduce the incidence of bladder cancer.

Definition of indicator and its variants:

Registrations for bladder cancer (ICD-10 C67 equivalent to ICD-9 188).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Indirectly age-standardised registration ratio (SRR) and number of registrations	MFP	All ages <75	E&W, E, GOR, ONS area, SHA, LA, PCO	2006-08		19A_029SR00++_08_V1 19A_029SR0074_08_V1
		All ages			1993-08	19A_029SRT00++_08_V1
Directly age-standardised registration rate and number of registrations	MFP	All ages <75	E&W, E, GOR, ONS area, SHA, LA, PCO	2006-08		19A_029DR00++_08_V1 19A_029DR0074_08_V1
		All ages			1993-08	19A_029DRT00++_08_V1

Numerator:

Numerator data - Cancer registrations for bladder cancer (ICD-10 C67, ICD-9 188) in the respective calendar years.

Source of numerator data - Regional Cancer Registries and the Office for National Statistics (ONS).

Comments on numerator data - Registration data for years 1993-2005 were extracted by ONS in November 2008. Data for 2006 are as registered by the end of September 2008. The data extracts for 2007 and 2008 are the same as used for the respective ONS Annual Reference Volume (series MB1). For all years 1993 to 2006 organisational codes were assigned using the postcode of usual residence and the August 2008 edition of the National Statistics Postcode Directory. Years 2007 and 2008 used the May 2010 and November 2010 editions respectively. Results in the current *Compendium* may differ from those of previous issues because of changes in methodology to extract data by area, and also because of data enhancements by ONS. Cancer registrations are also continuously being updated retrospectively and ONS records may have been updated since previous analyses.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 3: Explanations of statistical methods used in the *Compendium*

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service.* London: Department of Health, 2004.
2. Department of Health. *Day Surgery: Operational Guide. Waiting, booking and choice.* London: Department of Health, 2002.
3. Kuper H, Boffetta P, Adami H-O. Tobacco use and cancer causation: association by tumour type. *J Intern Med* 2002; 252(3): 206-224.

4. ONS. *Cancer Statistics Registrations - Registrations of cancer diagnosed in 2008, England.* Series MB1 No 39. London: ONS, 2010. Available at: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=8843

Updated: June 2011

Mortality from bladder cancer

Purpose:

To reduce deaths from bladder cancer.

Definition of indicator and its variants:

Mortality from bladder cancer (ICD-10 C67 equivalent to ICD-9 188).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		19B_030NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		19B_030CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <75 All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09	 1993-09	19B_030SM00++_09_V1 19B_030SM0074_09_V1 19B_030SMT00++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <75 All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09	 1993-09	19B_030DR00++_09_V1 19B_030DR0074_09_V1 19B_030DRT00++_09_V1

Numerator:

Numerator data - Deaths from bladder cancer, classified by underlying cause of death (ICD-10 C67, ICD-9 188 adjusted), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data – Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males   All Ages: 1
Females   All Ages: 1.016

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Relevant National initiatives:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service.* London: Department of Health, 2004.
2. National Institute for Clinical Excellence. *Improving Outcomes in Urological Cancers - The Manual.* London: National Institute for Clinical Excellence, 2002. Available at: http://www.nice.org.uk/pdf/Urological_Manual.pdf
3. Department of Health. *NHS Cancer Plan*. London: Department of Health, 2000.
4. NHS Executive. *Manual of Cancer Services Standards*. London: NHS Executive, 2000.
5. Department of Health. *Saving Lives: Our Healthier Nation.* London: The Stationery Office, 1999.

Further reading:

1. World Health Organization. WHO Framework on Tobacco Control. Avaliable at: http://www.who.int/tobacco/fctc/text/en/fctc_en.pdf
2. Brock A, Griffiths C. Trends in the mortality of young adults aged 15-44 in England and Wales, 1961-2001. Office for National Statistics Health Statistics Quarterly, No. 19, 2003: 22-31. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf

Updated: March 2011

Survival following diagnosis of bladder cancer

Purpose:

To provide comparative measures of the outcome of cancer treatment by area of residence, using geographical variations in cancer survival. Cancer survival is a key operational measure of the success of cancer treatment services. The principle of equity of access to optimal standards of National Health Service (NHS) cancer treatment was explicitly endorsed in the Calman-Hine report of 1995, which noted: "*All patients should have access to a uniformly high quality of care in the community or hospital wherever they may live to ensure the maximum possible cure rates and best quality of life*"[1]. A further policy document stated that from April 1999, patients with suspected breast cancer "*will be able to see a specialist within two weeks of their GP deciding they need to be seen urgently, and requesting an appointment*"[2]. Similar commitments have come into force for other cancers since April 2000. These policies are expected to lead to earlier diagnosis for all patients and more equitable access to treatment. The NHS Cancer Plan extended these commitments to improve cancer survival in England to amongst the best in Europe[3]. Cancer survival rates are outcome measures that can form part of the baseline for monitoring the future impact of these policies. Geographic differences in cancer survival are expected to decline over time if policy goals are achieved.

Definition of indicator and its variants:

Relative survival rate at one and five years after diagnosis for patients diagnosed in England during 2001-03 and followed up to the end of the year 2008. Cancer patients have higher mortality than the general population, but they do not all die of cancer. The relative survival rate is the ratio of the survival rate actually observed among the cancer patients and the survival rate that would have been expected if they had only had the same overall mortality rates as the general population. Thus, if five-year survival is 60% among a group of cancer patients of whom 90% would have been expected to survive that long, the relative survival is 67% (60/90). By convention, relative survival is described as a rate, although strictly it is a ratio of two percentages.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number and one-year relative survival rate (%)	MFP	15-99	E, GOR, SHA, CN	2001-03		19C_406PCP1_03_V1
Number and five-year relative survival rate (%)	MFP	15-99	E, GOR, SHA, CN	2001-03		19C_406PCP2_03_V1

Numerator:

Numerator data - Observed survival rate, derived from the distribution of survival times from the date of diagnosis (of a primary, invasive, malignant neoplasm) to the earliest date among the date of death, the date of emigration, and the cut-off date of follow-up (31 December 2008), for cancer patients who were diagnosed 2001-03 and resident in England at the time of diagnosis. Analyses published prior to the July 2009 Compendium release include only first primary malignancies. From the July 2009 release onwards, higher order primary malignancies are also retained. The geographical area of each patient is defined by residence at the time of diagnosis. Records with faulty data, and those of patients diagnosed with in situ tumours, tumours uncertain as to whether benign or malignant, metastatic, or uncertain whether primary or metastatic, are excluded from analysis.

Source of numerator data - National Cancer Intelligence Centre (NCIC), Office for National Statistics (ONS) derived from NHS regional cancer registries; National Health Service Central Register.

Comments on numerator data - European recommendations for coding bladder tumours changed in 1995 to exclude some urothelial papillary tumours of the bladder that would previously have been classified as invasive. Similar recommendations were implemented by UK cancer registries, but formally only for tumours registered from 2000 although some registries initiated such implementation earlier. Because of the excellent prognosis of these urothelial papillary tumours, their inclusion or not in the analysis explains some of the apparent geographical variations in survival.

Denominator:

Denominator data - The expected survival rate among the cancer patients, derived from life tables specific for the calendar year of death, single year of age, sex, Government Office Region of residence and deprivation.

Source of denominator data - Office for National Statistics (ONS).

Statistical methods:

The cumulative probability of death at a given time since diagnosis, relative to the corresponding probability in the general population, is estimated by comparing the death rates among the cancer patients in successive intervals

of time since diagnosis with the all-causes death rate in the general population for the same sex and age group[4]. This is derived from life tables for the Government Office Region in which the patient lives. Life tables were created that were specific for calendar year of death, single year of age, sex, Government Office Region and deprivation. Life tables were constructed for the years 1991, 2001 and 2005 using ONS mid-year population estimates and the mean annual number of deaths in the three years centred on those index years. Life tables for the intervening years were then created by linear interpolation. The life tables for 2005 were used for years 2006 to 2008 without interpolation.

The relative survival rates for the pooled three-year time period have been directly age-standardised to take into account any variation in relative survival by age. The standard population used is the number of persons who were diagnosed with the particular cancer under consideration in England and Wales during the period 1986-90. These were broken down into three age (at diagnosis) groups: 15-69, 70-79, and 80-99 years.

Male, female, and person relative survival rates are age-standardised using the same person standard population and may therefore be compared against each other. Rates for different cancers, however, are standardised using different standard populations, and in some instances different age groupings, and should therefore not be compared.

Annex 3 of the *Compendium User Guide*: Explanations of statistical methods used in the *Compendium*.

Interpretation of indicators:

Type of Indicator - The relative survival rate can be interpreted as an estimate of the proportion of cancer patients who die of their disease, after adjustment for death from other causes. A relative survival rate of 100% for a given period would imply that the cancer patients had had the same survival (or death) rates as the general population, *not* that they had all survived. Similarly, if the relative survival rate remains constant at (say) ten or more years after diagnosis, this implies that the ten-year survivors no longer have higher mortality than the general population.

Quality of indicator - Annex 12 of the *Compendium User Guide* describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Potential value of indicator:

Cancer survival is a broad indicator - differences may be due to a range of factors, of which the quality of treatment is only one. Differences in cancer survival between geographical areas should therefore be the origin of further enquiry, not the basis for simplistic conclusions about the efficacy of cancer treatment. The geographical area of residence at cancer diagnosis is a proxy for several aspects of health care, including the quality of primary care, the speed of referral and the quality of treatment services. It may also be a proxy for other factors, not readily measured, such as the degree of understanding of cancer symptoms and what to do about them among the local population, variations in the extent of disease at diagnosis (stage) and in the histology and grade of tumours, and artefacts in the data. If geographical survival differences can be attributed to differences in knowledge of cancer or the extent of disease at diagnosis, public health responses could be organised. Differences in cancer survival between geographical areas may also "turn out to be due to the persistence of outmoded practices, or other remediable deficiencies in service provision or therapeutic regimes, and correcting these should lead to an improvement in overall standards of care"[5].

Further reading:

A comprehensive monograph on cancer survival in England and Wales has been published[6], covering 2.9 million patients diagnosed with one of 47 adult cancers and 11 childhood cancers during 1971-90, and followed up to the end of 1995. It includes comprehensive analyses by age, sex, and NHS Region, and by socio-economic status (in five categories from affluent to deprived). Updated results for England and Wales have been published in 2004 and 2008 with a chapter for each of the 21 most common cancers.[7, 8] More limited analyses have also been published for cancer patients diagnosed during 1991-93 and followed up to 1998, and diagnosed during 1993-95 and followed up to 2000. [9, 10] Five-year age-standardised relative survival rates for 21 major cancers based on diagnoses in five year periods between 1998 and 2007 are available on the National Statistics website.[11] An early assessment of the impact of the NHS National Cancer Plan on relative survival has been published.[12] An all-cancer relative survival index for patients diagnosed 1991-2006 has been presented by PCT in England.[13] Cancer survival by Cancer Network has been presented for patients diagnosed with one of six cancers 1991-2006.[13]

1. Expert Advisory Group on Cancer. *A policy framework for commissioning cancer services.* London: Department of Health, 1995.
2. NHS Executive. *The new NHS. Modern. Dependable.* London: Department of Health, 1997.
3. Department of Health. *The NHS Cancer Plan: three-year progress report - maintaining the momentum.* London: Department of Health, 2003.
4. Estève J, Benhamou E, Croasdale M, Raymond L. Relative survival and the estimation of net survival: elements for further discussion. *Stat Med* 1990; 9: 529-38.

5. Clinical Outcomes Working Group. *Clinical outcome indicators, July 1996.* Edinburgh: The Scottish Office, 1996.

6. Coleman M.P, Babb P, Damiecki P, Grosclaude P, Honjo S, Jones J et al. *Cancer survival trends in England and Wales 1971-1995: deprivation and NHS Region*. Series SMPS No.61. London: The Stationery Office, 1999, 1-695.

7. Coleman M.P, Rachet B, Woods L.M, Mitry E, Riga M, Cooper N et al. Trends and socioeconomic inequalities in cancer survival in England and Wales up to 2001. *British Journal of Cancer* 2004; 90:1367-1373.

8. Shah A, Rachet B, Mitry E, Cooper N, Brown C.M, Coleman M.P. Survival from bladder cancer in England & Wales up to 2001. *British Journal of Cancer* 2008; 99:S86-S89.

9. Coleman M.P, Babb P, Harris S, Quinn M.J, Sloggett A, De Stavola B.L. Cancer survival in England and Wales, 1991-1998. *Office for National Statistics Health Statistics Quarterly* 2000; 6: 71-80.

10. Office for National Statistics. Cancer survival in the health authorities of England,1993-2000*. Report. *Office for National Statistics Health Statistics Quarterly* 2002;13: 95-103.

11. Office for National Statistics. *Survival Rates in England and Wales, 1998-2001, 1999-2002, 1999-03; Survival Rates in England 2000-04, 2001-06*. National Statistics website. Available at: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=14007&Pos=3&ColRank=1&Rank=422 , accessed 16 September 2010.

12. Rachet B, Maringe C, Nur U, Quaresma M, Shah A, Woods LM, et al. Population-based cancer survival trends in England and Wales up to 2007: an assessment of the NHS cancer plan for England. *Lancet Oncol* 2009;10:351-69.

13. Office for National Statistics. *Cancer survival by cancer network, patients diagnosed 1991-2006, followed up to 2007*. National Statistics website. Available at: http://www.statistics.gov.uk/STATBASE/Product.asp?vlnk=15387. Accessed 15 September 2010.

Updated: October 2010

Deaths at home from bladder cancer

Purpose:

To improve palliative care and service planning for cancer patients in the terminal stages of life, allowing more of them the choice of dying at home.

Definition of indicator and its variants:

The proportion of deaths from bladder cancer (ICD-10 C67) that occur at home.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Percent of deaths at home	MFP	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		19D_198PC_09_V1
Indirectly age-standardised deaths at home rate per 100 deaths and number of deaths at home	MFP	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		19D_198ISR_09_V1

Numerator:

Numerator data - Deaths at home from bladder cancer, classified by underlying cause of death (ICD-10 C67), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data – Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

 Information about the place of death is found on the mortality record in the communal establishment field. It contains one of:

- a 5 digit code identifying a communal establishment or institution (e.g. hospital, nursing home, residential home);
- an "H" code which indicates that the person is certified as having died at their home address and that this is not a communal establishment or;
- an "E" code which indicates that the person died elsewhere.

The communal establishments are themselves classified into 84 categories (e.g. general hospital, mental nursing home, nursing home etc) and can be further distinguished by whether they are an NHS or Non-NHS establishment.

It is currently ONS practice to include nursing homes with hospitals under a broader group - "Other hospitals and communal establishments for the care of the sick" - and also to include residential homes under "Other communal establishments". This is because of concerns highlighted by the ONS regarding the accuracy of the recorded status of some communal establishments, particularly nursing homes and residential homes.

It is therefore not possible to include nursing home or residential home deaths as a "home" death. For this indicator, a "home" death is defined as one that has the "H" code in the communal establishment field, i.e. where the death has occurred at the home address and that address is not of a communal establishment.

Denominator:

Denominator data - All deaths from bladder cancer, classified by underlying cause of death (ICD-10 C67), registered in the respective calendar year(s).

Source of denominator data - ONS.

Comments on denominator data - Includes deaths in all categories of communal establishment code, i.e. deaths in all communal establishments, at home, and elsewhere.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*. See Annex 2 for more details.

Statistical methods:

The age-standardised deaths at home rate utilises the indirect method of standardisation. The direct method was found not to be robust as it was affected by small numerator and denominator counts in specific age groups.

Indirect standardisation requires the computation of the ratio of an area's observed number of events to its expected number of events if it had experienced the standard age-specific rates. This age-standardised ratio can be converted into a rate by multiplying it by the crude rate of the standard population.

The standard rates used are those of England for the respective calendar year(s). Male and female rates have been standardised separately. The rate for persons is standardised for both age and sex.

This methodology is similar to that used for the Clinical Indicators and is described in detail in:

Annex 3: Explanations of statistical methods used in the *Compendium* (under the sections entitled "Indirectly Standardised Rates For Clinical Indicators" and "Confidence Intervals Of Indirectly Standardised Rates For Clinical Indicators").

Interpretation of indicators:

Type of Indicator - This is a condition-specific cross-sectional comparative indicator reflecting events which act as a proxy for outcome (quality of dying). In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable areas.

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - 95%. Some of the values and factors influencing them may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of deaths may be small at individual organisational level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% probability, will contain the underlying value of the indicator. If the confidence interval for an organisation's rate is outside the range of the national confidence intervals, the difference between the two rates is considered statistically significant. If the confidence intervals for two rates overlap, in most cases the difference between the rates would not be considered statistically significant.

Effect of Case-Mix / severity - Severity of the cancer and need for hospital care have implications for those who wish to die at home being able to do so. The data available do not allow adjustment for these factors.

Other Potential Confounding Factors - A number of factors outside the control of the NHS such as personal choice, availability of hospices, and family/community support may contribute to the variation shown by the indicator.

Relevant National initiatives:

1. Department of Health. *End of life care strategy : Promoting high quality care for all adults at the end of life*. London: Department of Health , 2008.
   http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_086277
2. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service*. London: Department of Health, 2004.
3. Department of Health. *Pioneering Schemes Named Best of the Best. NHS Beacons – Part of a Concerted Campaign to Improve Cancer Services.* Department of Health, 1999. Press release: reference 1999/0375
4. Commission for Health Improvement. *NHS Cancer Care in England and Wales. National Service Framework Assessments No.1*. London: Commission for Health Improvement, 2001.

Further reading:

1. Higginson IJ, Thompson M. *Children and young people who die from cancer: epidemiology and place of death in England (1995-9). British Medical Journal* 2003; 327: 478-479.
2. Grande G.E, Todd C.J, Barclay SIG, Farquhar MC. *Does hospital at home for palliative care facilitate death at home? Randomised controlled trial. British Medical Journal* 1999; 319: 1472-1475.
3. Higginson IJ, Jarman B, Astin P, Dolan S. *Do social factors affect where patients die: an analysis of 10 years of cancer deaths in England.* Journal of Public Health Medicine 1999; 21(1): 23-28.

Updated: March 2011

Years of life lost due to mortality from bladder cancer

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from bladder cancer (ICD-10 C67).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		19E_035CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		19E_035DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from bladder cancer classified by underlying cause of death (ICD-10 C67), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Relevant National initiatives:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service.* London: Department of Health, 2004.
2. National Institute for Clinical Excellence. *Improving Outcomes in Urological Cancers - The Manual.* London: National Institute for Clinical Excellence, 2002. Available at: http://www.nice.org.uk/pdf/Urological_Manual.pdf
3. Department of Health. *NHS Cancer Plan*. London: Department of Health, 2000.
4. NHS Executive. *Manual of Cancer Services Standards.* London: NHS Executive, 2000.
5. Department of Health. *Saving Lives: Our Healthier Nation.* London: The Stationery Office, 1999.

Further reading:

1. World Health Organization. WHO Framework on Tobacco Control. Avaliable at: http://www.who.int/tobacco/fctc/text/en/fctc_en.pdf
2. Brock A, Griffiths C. Trends in the mortality of young adults aged 15-44 in England and Wales, 1961-2001. Office for National Statistics Health Statistics Quarterly, No. 19, 2003: 22-31. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf

Updated: March 2011

Incidence of breast cancer

Purpose:

To reduce the incidence of breast cancer.

Definition of indicator and its variants:

Registrations for breast cancer (ICD-10 C50 equivalent to ICD-9 174).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Indirectly age-standardised registration ratio (SRR) and number of registrations	F	All ages <75	E&W, E, GOR, ONS area, SHA, LA, PCO	2006-08		16A_033SR00++_08_V1 16A_033SR0074_08_V1
		All ages			1993-08	16A_033SRT00++_08_V1
Directly age-standardised registration rate and number of registrations	F	All ages <75	E&W, E, GOR, ONS area, SHA, LA, PCO	2006-08		16A_033DR00++_08_V1 16A_033DR0074_08_V1
		All ages			1993-08	16A_033DRT00++_08_V1

Numerator:

Numerator data - Cancer registrations for breast cancer (ICD-10 C50 equivalent to ICD-9 174) in the respective calendar years.

Source of numerator data - Regional Cancer Registries and the Office for National Statistics (ONS).

Comments on numerator data - Registration data for years 1993-2005 were extracted by ONS in November 2008. Data for 2006 are as registered by the end of September 2008. The data extracts for 2007 and 2008 are the same as used for the respective ONS Annual Reference Volume (series MB1). For all years 1993 to 2006 organisational codes were assigned using the postcode of usual residence and the August 2008 edition of the National Statistics Postcode Directory. Years 2007 and 2008 used the May 2010 and November 2010 editions respectively. Results in the current *Compendium* may differ from those of previous issues because of changes in methodology to extract data by area, and also because of data enhancements by ONS. Cancer registrations are also continuously being updated retrospectively and ONS records may have been updated since previous analyses.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 3: Explanations of statistical methodologies used in the *Compendium*

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service*. London: Department of Health, 2004.
2. Birkhead J, Goldacre M, Mason A, Wilkinson E, Amess M, Cleary R. *Health Outcome Indicators - Breast Cancer.* London: NCHOD, 1999. Available at http://nchod.uhce.ox.ac.uk/breastcancer.pdf
3. NHS. Improving Outcomes in Breast Cancer - The Research Evidence. London: Department of Health, 1996.
4. ONS. *Cancer Statistics Registrations - Registrations of cancer diagnosed in 2008, England.* Series MB1 No 39. London: ONS, 2010. Available at: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=8843

Updated: June 2011

Mortality from breast cancer

Purpose:

To reduce deaths from breast cancer.

Definition of indicator and its variants:

Mortality from breast cancer (ICD-10 C50 equivalent to ICD-9 174).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	F	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		16B_034NO_09_V1
Average age-specific death rate per 100,000 resident population	F	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		16B_034CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	F	All ages, <75, 50-64, 50-69	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		16B_034SM00++_09_V1 16B_034SM0074_09_V1 16B_034SM5064_09_V1 16B_034SM5069_09_V1
		All ages 50-69			1993-09	16B_034SMT00++_09_V1 16B_034SMT5069_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	F	All ages, <75, 50-64, 50-69	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		16B_034DR00++_09_V1 16B_034DR0074_09_V1 16B_034DR5064_09_V1 16B_034DR5069_09_V1
		All ages 50-69			1993-09	16B_034DRT00++_09_V1 16B_034DRT5069_09_V1

Numerator:

Numerator data - Deaths from breast cancer, classified by underlying cause of death (ICD-10 C50, ICD-9 174 adjusted), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data – Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

The directly age-standardised mortality rate from breast cancer for women aged 50-69 was a target indicator in the *Health of the Nation* strategy (See "Further reading").

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Females   0-74yrs: 1.003   75-84yrs: 1.032   85+yrs: 1.097

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methodologies used in the *Compendium*
Annex 5: European Standard Population
Annex 6: Goals of *Our Healthier Nation*

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service.* London: Department of Health, 2004.
2. Department of Health. *NHS Cancer Plan*. London: Department of Health, 2000.
3. NHS. *Manual of Cancer Services Standards*. London: NHS Executive, 2000.
4. Department of Health. *Saving Lives: Our Healthier Nation*. London: The Stationery Office, 1999.
5. Haward R, Goldacre M, Mason A, Wilkinson E, Amess M. *Health Outcome Indicators: Breast Cancer* . Oxford: NCHOD, 1999. Available at http://nchod.uhce.ox.ac.uk/breastcancer.pdf
6. Department of Health. *Health of the Nation - A Strategy for Health in England.* London: Her Majesty's Stationery Office, 1992.

Updated: March 2011

Survival following diagnosis of breast cancer

Purpose:

To provide comparative measures of the outcome of cancer treatment by area of residence, using geographical variations in cancer survival. Cancer survival is a key operational measure of the success of cancer treatment services. The principle of equity of access to optimal standards of National Health Service (NHS) cancer treatment was explicitly endorsed in the Calman-Hine report of 1995, which noted: "*All patients should have access to a uniformly high quality of care in the community or hospital wherever they may live to ensure the maximum possible cure rates and best quality of life*"[1]. A further policy document stated that from April 1999, patients with suspected breast cancer "*will be able to see a specialist within two weeks of their GP deciding they need to be seen urgently, and requesting an appointment*"[2]. Similar commitments have come into force for other cancers since April 2000. These policies are expected to lead to earlier diagnosis for all patients and more equitable access to treatment. The NHS Cancer Plan extended these commitments to improve cancer survival in England to amongst the best in Europe[3]. Cancer survival rates are outcome measures that can form part of the baseline for monitoring the future impact of these policies. Geographic differences in cancer survival are expected to decline over time if policy goals are achieved.

Definition of indicator and its variants:

Relative survival rate at one and five years after diagnosis for patients diagnosed in England during 2001-03 and followed up to the end of the year 2008. Cancer patients have higher mortality than the general population, but they do not all die of cancer. The relative survival rate is the ratio of the survival rate actually observed among the cancer patients and the survival rate that would have been expected if they had only had the same overall mortality rates as the general population. Thus, if five-year survival is 60% among a group of cancer patients of whom 90% would have been expected to survive that long, the relative survival is 67% (60/90). By convention, relative survival is described as a rate, although strictly it is a ratio of two percentages.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number and one-year relative survival rate (%)	F	15-99	E, GOR, SHA, CN	2001-03		16C_407PCP1_03_V1
Number and five-year relative survival rate (%)	F	15-99	E, GOR, SHA, CN	2001-03		16C_407PCP2_03_V1

Numerator:

Numerator data - Observed survival rate, derived from the distribution of survival times from the date of diagnosis (of a primary, invasive, malignant neoplasm) to the earliest date among the date of death, the date of emigration, and the cut-off date of follow-up (31 December 2008), for cancer patients who were diagnosed during 2001-03 and resident in England at the time of diagnosis. Analyses published prior to the July 2009 Compendium release include only first primary malignancies. From the July 2009 release onwards, higher order primary malignancies are also retained. The geographical area of each patient is defined by residence at the time of diagnosis. Records with faulty data, and those of patients diagnosed with in situ tumours, tumours uncertain as to whether benign or malignant, metastatic, or uncertain whether primary or metastatic, are excluded from analysis.

Source of numerator data - National Cancer Intelligence Centre (NCIC), Office for National Statistics (ONS) derived from NHS regional cancer registries; National Health Service Central Register.

Comments on numerator data -

Denominator:

Denominator data - The expected survival rate among the cancer patients, derived from life tables specific for the calendar year of death, single year of age, sex, Government Office Region of residence and deprivation.

Source of denominator data - Office for National Statistics (ONS).

Statistical methods:

The cumulative probability of death at a given time since diagnosis, relative to the corresponding probability in the general population, is estimated by comparing the death rates among the cancer patients in successive intervals of time since diagnosis with the all-causes death rate in the general population for the same sex and age group[4]. This is derived from life tables for the Government Office Region in which the patient lives. Life tables were created that were specific for calendar year of death, single year of age, sex, Government Office Region and deprivation. Life tables were constructed for the years 1991, 2001 and 2005 using ONS mid-year population estimates and the mean annual number of deaths in the three years centred on those index years. Life tables for

the intervening years were then created by linear interpolation. The life tables for 2005 were used for years 2006 to 2008 without interpolation.

The relative survival rates for the pooled three-year time period have been directly age-standardised to take into account any variation in relative survival by age. The standard population used is the number of persons who were diagnosed with the particular cancer under consideration in England and Wales during the period 1986-90. These were broken down into three age (at diagnosis) groups: 15-69, 70-79, and 80-99 years.

Rates for different cancers are standardised using different standard populations, and in some instances different age groupings, and should therefore not be compared.

Annex 3 of the *Compendium User Guide*: Explanations of statistical methods used in the *Compendium*.

Interpretation of indicators:

Type of Indicator - The relative survival rate can be interpreted as an estimate of the proportion of cancer patients who die of their disease, after adjustment for death from other causes. A relative survival rate of 100% for a given period would imply that the cancer patients had had the same survival (or death) rates as the general population, *not* that they had all survived. Similarly, if the relative survival rate remains constant at (say) ten or more years after diagnosis, this implies that the ten-year survivors no longer have higher mortality than the general population.

Quality of indicator - Annex 12 of the *Compendium User Guide* describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Potential value of indicator:

Cancer survival is a broad indicator - differences may be due to a range of factors, of which the quality of treatment is only one. Differences in cancer survival between geographical areas should therefore be the origin of further enquiry, not the basis for simplistic conclusions about the efficacy of cancer treatment. The geographical area of residence at cancer diagnosis is a proxy for several aspects of health care, including the quality of primary care, the speed of referral and the quality of treatment services. It may also be a proxy for other factors, not readily measured, such as the degree of understanding of cancer symptoms and what to do about them among the local population, variations in the extent of disease at diagnosis (stage) and in the histology and grade of tumours, and artefacts in the data. If geographical survival differences can be attributed to differences in knowledge of cancer or the extent of disease at diagnosis, public health responses could be organised. Differences in cancer survival between geographical areas may also "turn out to be due to the persistence of outmoded practices, or other remediable deficiencies in service provision or therapeutic regimes, and correcting these should lead to an improvement in overall standards of care"[5].

Further reading:

A comprehensive monograph on cancer survival in England and Wales has been published[6], covering 2.9 million patients diagnosed with one of 47 adult cancers and 11 childhood cancers during 1971-90, and followed up to the end of 1995. It includes comprehensive analyses by age, sex, and NHS Region, and by socio-economic status (in five categories from affluent to deprived). Updated results for England and Wales have been published in 2004 and 2008 with a chapter for each of the 21 most common cancers.[7, 8] More limited analyses have also been published for cancer patients diagnosed during 1991-93 and followed up to 1998, and diagnosed during 1993-95 and followed up to 2000.[9, 10] Five-year age-standardised relative survival rates for 21 major cancers based on diagnoses in five year periods between 1998 and 2007 are available on the National Statistics website.[11] An early assessment of the impact of the NHS National Cancer Plan on relative survival has been published.[12] An all-cancer relative survival index for patients diagnosed 1991-2006 has been presented by PCT in England.[13] Cancer survival by Cancer Network has been presented for patients diagnosed with one of six cancers 1991-2006.[13]

1. Expert Advisory Group on Cancer. *A policy framework for commissioning cancer services.* London: Department of Health, 1995.
2. NHS Executive. *The new NHS. Modern. Dependable.* London: Department of Health, 1997.
3. Department of Health. *The NHS Cancer Plan: three-year progress report - maintaining the momentum.* London: Department of Health, 2003.
4. Estève J, Benhamou E, Croasdale M, Raymond L. Relative survival and the estimation of net survival: elements for further discussion. *Stat Med* 1990; 9: 529-38.
5. Clinical Outcomes Working Group. *Clinical outcome indicators, July 1996.* Edinburgh: The Scottish Office, 1996.
6. Coleman M.P, Babb P, Damiecki P, Grosclaude P, Honjo S, Jones J et al. *Cancer survival trends in England and Wales 1971-1995: deprivation and NHS Region*. Series SMPS No.61. London: The Stationery Office, 1999, 1-695.
7. Coleman M.P, Rachet B, Woods L.M, Mitry E, Riga M, Cooper N et al. Trends and socioeconomic inequalities in cancer survival in England and Wales up to 2001. *British Journal of Cancer* 2004; 90:1367-1373.

8. Quinn M.J, Cooper N, Rachet B, Mitry E, Coleman M.P. Survival from cancer of the breast in women in England & Wales up to 2001. *British Journal of Cancer* 2008; 99:S53-S55.
9. Coleman M.P, Babb P, Harris S, Quinn M.J, Sloggett A, De Stavola B.L. Cancer survival in England and Wales, 1991-1998. *Office for National Statistics Health Statistics Quarterly* 2000; 6: 71-80.
10. Office for National Statistics. Cancer survival in the health authorities of England,1993-2000. Report. *Office for National Statistics Health Statistics Quarterly* 2002;13: 95-103.
11. Office for National Statistics. *Survival Rates in England and Wales, 1998-2001, 1999-2002, 1999-03; Survival Rates in England 2000-04, 2001-06*. National Statistics website. Available at: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=14007&Pos=3&ColRank=1&Rank=422 , accessed 16 September 2010.
12. Rachet B, Maringe C, Nur U, Quaresma M, Shah A, Woods LM, et al. Population-based cancer survival trends in England and Wales up to 2007: an assessment of the NHS cancer plan for England. *Lancet Oncol* 2009;10:351-69.
13. Office for National Statistics. *Cancer survival by cancer network, patients diagnosed 1991-2006, followed up to 2007*. National Statistics website. Available at: http://www.statistics.gov.uk/STATBASE/Product.asp?vlnk=15387. Accessed 15 September 2010.

Updated: October 2010

Deaths at home from breast cancer

Purpose:

To improve palliative care and service planning for cancer patients in the terminal stages of life, allowing more of them the choice of dying at home.

Definition of indicator and its variants:

The proportion of deaths from breast cancer (ICD-10 C50) that occur at home.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Percent of deaths at home	F	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		16D_195PC_09_V1
Indirectly age-standardised deaths at home rate per 100 deaths and number of deaths at home	F	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		16D_195ISR_09_V1

Numerator:

Numerator data - Deaths at home from breast cancer, classified by underlying cause of death (ICD-10 C50), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data – Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

Information about the place of death is found on the mortality record in the communal establishment field. It contains one of:

- a 5 digit code identifying a communal establishment or institution (e.g. hospital, nursing home, residential home);
- an "H" code which indicates that the person is certified as having died at their home address and that this is not a communal establishment or;
- an "E" code which indicates that the person died elsewhere.

The communal establishments are themselves classified into 84 categories (e.g. general hospital, mental nursing home, nursing home etc) and can be further distinguished by whether they are an NHS or Non-NHS establishment.

It is currently ONS practice to include nursing homes with hospitals under a broader group - "Other hospitals and communal establishments for the care of the sick" and also to include residential homes under "Other communal establishments". This is because of concerns highlighted by ONS regarding the accuracy of the recorded status of some communal establishments, particularly nursing homes and residential homes.

It is therefore not possible to include nursing home or residential home deaths as a "home" death. For this indicator, a "home" death is defined as one that has the "H" code in the communal establishment field, i.e. where the death has occurred at the home address and that address is not of a communal establishment.

Denominator:

Denominator data - All deaths from breast cancer, classified by underlying cause of death (ICD-10 C50), registered in the respective calendar year(s).

Source of denominator data - ONS.

Comments on denominator data - Includes deaths in all categories of communal establishment code, i.e. deaths in all communal establishments, at home, and elsewhere.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*. See Annex 2 for more details.

Statistical methods:

The age-standardised deaths at home rate utilises the indirect method of standardisation. The direct method was found not to be robust as it was affected by small numerator and denominator counts in specific age groups.

Indirect standardisation requires the computation of the ratio of an area's observed number of events to its expected number of events if it had experienced the standard age-specific rates. This age-standardised ratio can be converted into a rate by multiplying it by the crude rate of the standard population.

The standard rates used are those of England for the respective calendar year(s). Male and female rates have been standardised separately. The rate for persons is standardised for both age and sex.

This methodology is similar to that used for the Clinical Indicators and is described in detail in:

Annex 3: Explanations of statistical methods used in the *Compendium* (under the sections entitled "Indirectly Standardised Rates For Clinical Indicators" and "Confidence Intervals Of Indirectly Standardised Rates For Clinical Indicators").

Interpretation of indicators:

Type of Indicator - This is a condition-specific cross-sectional comparative indicator reflecting events which act as a proxy for outcome (quality of dying). In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable areas.

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - 95%. Some of the values and factors influencing them may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of deaths may be small at individual organisational level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% probability, will contain the underlying value of the indicator. If the confidence interval for an organisation's rate is outside the range of the national confidence intervals, the difference between the two rates is considered statistically significant. If the confidence intervals for two rates overlap, in most cases the difference between the rates would not be considered statistically significant.

Effect of Case-Mix / severity - Severity of the cancer and need for hospital care have implications for those who wish to die at home being able to do so. The data available do not allow adjustment for these factors.

Other Potential Confounding Factors - A number of factors outside the control of the NHS such as personal choice, availability of hospices, and family/community support may contribute to the variation shown by the indicator.

Relevant National initiatives:

1. Department of Health. *End of life care strategy : Promoting high quality care for all adults at the end of life*. London: Department of Health , 2008.
   http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_086277
2. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service*. London: Department of Health, 2004.
3. Department of Health. *Pioneering Schemes Named Best of the Best. NHS Beacons – Part of a Concerted Campaign to Improve Cancer Services.* Department of Health, 1999. Press release: reference 1999/0375
4. Commission for Health Improvement. *NHS Cancer Care in England and Wales. National Service Framework Assessments No.1*. London: Commission for Health Improvement, 2001.

Further reading:

1. Higginson I.J, Thompson M. Children and young people who die from cancer: epidemiology and place of death in England (1995-9). *British Medical Journal* 2003; 327: 478-479.
2. Grande GE, Todd CJ, Barclay SIG, Farquhar MC. Does hospital at home for palliative care facilitate death at home? Randomised controlled trial. *British Medical Journal* 1999; 319: 1472-1475.
3. Higginson I.J, Jarman B, Astin P, Dolan S. Do social factors affect where patients die: an analysis of 10 years of cancer deaths in England. *Journal of Public Health Medicine* 1999; 21(1): 23-28.

Updated: March 2011

Breast screening programme coverage

Purpose:

To reduce the death toll from breast cancer. Early diagnosis can have a major impact on breast cancer survival. National policy for the screening programme is that eligible women aged 50-70 are invited for screening every 3 years. Because the programme is a rolling one which invites women from GP practices (or geographical areas) in a three year cycle, not every woman will receive an invitation as soon as she is 50. However, every woman should receive her first invitation before her 53rd birthday. Women who are over the upper age limit for routine invitations for breast screening are encouraged to make their own appointments at three yearly intervals. Previously only women aged 50-64 were eligible to be invited as part of the NHS Breast Screening Programme. However, this was extended in April 2001 to include women aged 65-70. The last screening unit began inviting older women in April 2006. While the majority of PCOs are now inviting all women aged 50-70, full national coverage should be achieved in 2010.

In September 2000, the first research was published which demonstrated that the National Health Service Breast Screening Programme has lowered mortality rates from breast cancer in the 55-69 age group.[1] In 2002 the World Health Organization's International Agency for Research on Cancer (IARC) concluded that mammography screening for breast cancer reduces mortality. The IARC working group, comprising 24 experts from 11 countries, evaluated all the available evidence on breast screening and determined that there is a 35 per cent reduction in mortality from breast cancer among screened women aged 50-69 years old. This means that out of every 500 women screened, one life will be saved.[2]

Definition of indicator and its variants:

The coverage of the screening programme is defined as the proportion of women eligible for screening who have had a test with a recorded result at least once in the previous 3 years. Women ineligible for screening, and therefore excluded from both the numerator and denominator of the coverage calculation, are those whose recall has been ceased for clinical reasons (e.g. those who have had a bilateral mastectomy). Coverage of the screening programme is best assessed using the 53-64 and 53-70 year age groups as women may be first called at any time between their 50th and 53rd birthdays.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Percent	F	53-64	E, GOR, SHA, PCO	2010		16E_426PCP1_10_V1
		53-70		2010		16E_426PCP2_10_V1

Numerator:

Numerator data - Numerator data – Eligible women recorded as having had a test with a recorded result at least once in the previous 3 years as at 31 March for the respective year.

Source of numerator data – The NHS Information Centre for health and social care. Breast Screening Programme, England 2009-10. Leeds: The NHS Information Centre for health and social care, 2011.

Comments on numerator data - Local level coverage is calculated for Primary Care Organisations (PCOs). Although PCOs have a defined geographical boundary, the populations used are NOT those of women resident within the PCO boundaries. Instead, the populations of women for whom each of the PCOs is responsible are used. Where women on the call/recall screening register are not registered with a GP at the time coverage is calculated, they are allocated to a PCO on a geographical basis. Similarly, the populations used for Strategic Health Authorities and Government Office Regions are NOT those of women resident within their boundaries, but are the aggregates of the responsible populations of their constituent PCOs.

PCOs report the population coverage of the screening programme on the NHS Information Centre for health and social care return KC63.

Denominator:

Denominator data - Eligible women. Responsible population estimates based on Exeter System GP lists as at 31 March for the respective year, less the number of women recorded as ineligible.

Source of denominator data – The NHS Information Centre for health and social care. Breast Screening Programme, England 2009-10. Leeds: The NHS Information Centre for health and social care, 2011.

Comments on denominator data - See "Comments on numerator data".

Statistical methods:

Annex 3: Explanations of statistical methods used in the *Compendium.*

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - 95%. Some of the values and factors influencing them may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of deaths may be small at individual organisational level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% probability, will contain the underlying value of the indicator. If the confidence interval for an organisation's rate is outside the range of the national confidence intervals, the difference between the two rates is considered statistically significant. If the confidence intervals for two rates overlap, in most cases the difference between the rates would not be considered statistically significant.

Further reading:

1. Blanks RG et al. *Effect of NHS Breast Cancer Screening Programme on Mortality from Breast Cancer in England and Wales, 1990-8: Comparison of Observed with Predicted Mortality. British Medical Journal* 2000; 321:665-669.
2. IARC. *Handbooks of Cancer Prevention Volume 7 – Breast Cancer Screening.* Lyons: IARC, 2002
3. NHS Cancer Screening Programmes Web Site: http://www.cancerscreening.nhs.uk
4. NHS Information Centre for health and social care web site: NHS Breast Screening Programme Statistics: http://www.cancerscreening.nhs.uk/breastscreen/statistics.html
5. NHS. *NHS Breast Screening Programme Annual Review 2010 – Overcoming barriers.* Sheffield: NHS Cancer Screening Programmes, 2010. Available at: http://www.cancerscreening.nhs.uk/breastscreen/publications/nhsbsp-annualreview2010.pdf
6. Department of Health. *The NHS Cancer Plan.* London: The Stationery Office, 2000.
7. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service.* London: Department of Health, 2004.

Updated: June 2011

Years of life lost due to mortality from breast cancer

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from breast cancer (ICD-10 C50).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	F	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		16G_036CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	F	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		16G_036DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from breast cancer classified by underlying cause of death (ICD-10 C50), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

   Annex 2: Changes to Office for National Statistics mortality data
   Annex 3: Explanations of statistical methods used in the *Compendium*
   Annex 5: European Standard Population

Interpretation of indicators:

   Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

   1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service.* London: Department of Health, 2004.
   2. Department of Health. *NHS Cancer Plan*. London: Department of Health, 2000.
   3. NHS. *Manual of Cancer Services Standards*. London: NHS Executive, 2000.
   4. Department of Health. *Saving Lives: Our Healthier Nation*. London: The Stationery Office, 1999.
   5. Haward R, Goldacre M, Mason A, Wilkinson E, Amess M. *Health Outcome Indicators: Breast Cancer* . Oxford: NCHOD, 1999. Available at http://nchod.uhce.ox.ac.uk/breastcancer.pdf
   6. Department of Health. *Health of the Nation - A Strategy for Health in England.* London: Her Majesty's Stationery Office, 1992.

Updated: March 2011

Incidence of cervical cancer

Purpose:

To reduce the incidence of cervical cancer.

Definition of indicator and its variants:

Registrations for cervical cancer (ICD-10 C53 equivalent to ICD-9 180).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Indirectly age-standardised registration ratio (SRR) and number of registrations	F	All ages <75	E&W, E, GOR, ONS area, SHA, LA, PCO	2006-08		17A_039SR00++_08_V1 17A_039SR0074_08_V1
		All ages			1993-08	17A_039SRT00++_08_V1
Directly age-standardised registration rate and number of registrations	F	All ages <75	E&W, E, GOR, ONS area, SHA, LA, PCO	2006-08		17A_039DR00++_08_V1 17A_039DR0074_08_V1
		All ages			1993-08	17A_039DRT00++_08_V1

Numerator:

Numerator data - Cancer registrations for cervical cancer (ICD-10 C53, ICD-9 180) in the respective calendar years.

Source of numerator data - Regional Cancer Registries and the Office for National Statistics (ONS).

Comments on numerator data - Registration data for years 1993-2005 were extracted by ONS in November 2008. Data for 2006 are as registered by the end of September 2008. The data extracts for 2007 and 2008 are the same as used for the respective ONS Annual Reference Volume (series MB1). For all years 1993 to 2006 organisational codes were assigned using the postcode of usual residence and the August 2008 edition of the National Statistics Postcode Directory. Years 2007 and 2008 used the May 2010 and November 2010 editions respectively. Results in the current *Compendium* may differ from those of previous issues because of changes in methodology to extract data by area, and also because of data enhancements by ONS. Cancer registrations are also continuously being updated retrospectively and ONS records may have been updated since previous analyses.

The directly age-standardised registration rate for cervical cancer for women of all ages was a target indicator in the *Health of the Nation* strategy (See "Further reading").

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service*. London: Department of Health, 2004.
2. Department of Health. *Health of the Nation - a strategy for health in England*. London: Her Majesty's Stationery Office, 1992.

3. ONS. *Cancer Statistics Registrations - Registrations of cancer diagnosed in 2008, England.* Series MB1 No 39. London: ONS, 2010. Available at: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=8843

Updated: June 2011

Mortality from cervical cancer

Purpose:

To reduce deaths from cervical cancer.

Definition of indicator and its variants:

Mortality from cervical cancer (ICD-10 C53 equivalent to ICD-9 180).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	F	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		17B_040NO_09_V1
Average age-specific death rate per 100,000 resident population	F	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		17B_040CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	F	All ages, <75, 15-64, 65-74	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		17B_040SM00++_09_V1 17B_040SM0074_09_V1 17B_040SM1564_09_V1 17B_040SM6574_09_V1
		All ages			1993-09	17B_040SMT00++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	F	All ages, <75, 15-64, 65-74	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		17B_040DR00++_09_V1 17B_040DR0074_09_V1 17B_040DR1564_09_V1 17B_040DR6574_09_V1
		All ages			1993-09	17B_040DRT00++_09_V1

Numerator:

Numerator data - Deaths from cervical cancer, classified by underlying cause of death (ICD-10 C53, ICD-9 180), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data – Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Females   All Ages: 1

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service.* London: Department of Health, 2004.
2. Brock A, Griffiths C. Trends in the mortality of young adults aged 15-44 in England and Wales, 1961-2001. *Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 22-31. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf
3. World Health Organization. *WHO Framework on Tobacco Control*. Geneva: World Health Organization, 2003. Available at: http://www.who.int/tobacco/fctc/text/en/fctc_en.pdf
4. Department of Health. *NHS Cancer Plan.* London: Department of Health, 2000.
5. NHS. *Manual of Cancer Services Standards*. London: NHS Executive, 2000.
6. Department of Health. *Saving lives: Our Healthier Nation*. London: The Stationery Office, 1999.
7. World Bank. *Economics of Tobacco Control*. Washington: World Bank, 1999. Available at: http://www1.worldbank.org/tobacco/book/pdf/tobacco.pdf
8. Department of Health. *Smoking kills – a White Paper on tobacco*. London: The Stationery Office, 1998.

Updated: March 2011

Survival following diagnosis of cervical cancer

Purpose:

To provide comparative measures of the outcome of cancer treatment by area of residence, using geographical variations in cancer survival. Cancer survival is a key operational measure of the success of cancer treatment services. The principle of equity of access to optimal standards of National Health Service (NHS) cancer treatment was explicitly endorsed in the Calman-Hine report of 1995, which noted: "*All patients should have access to a uniformly high quality of care in the community or hospital wherever they may live to ensure the maximum possible cure rates and best quality of life*"[1]. A further policy document stated that from April 1999, patients with suspected breast cancer "*will be able to see a specialist within two weeks of their GP deciding they need to be seen urgently, and requesting an appointment*"[2]. Similar commitments have come into force for other cancers since April 2000. These policies are expected to lead to earlier diagnosis for all patients and more equitable access to treatment. The NHS Cancer Plan extended these commitments to improve cancer survival in England to amongst the best in Europe[3]. Cancer survival rates are outcome measures that can form part of the baseline for monitoring the future impact of these policies. Geographic differences in cancer survival are expected to decline over time if policy goals are achieved.

Definition of indicator and its variants:

Relative survival rate at one and five years after diagnosis for patients diagnosed in England during 2001-03 and followed up to the end of the year 2008. Cancer patients have higher mortality than the general population, but they do not all die of cancer. The relative survival rate is the ratio of the survival rate actually observed among the cancer patients and the survival rate that would have been expected if they had only had the same overall mortality rates as the general population. Thus, if five-year survival is 60% among a group of cancer patients of whom 90% would have been expected to survive that long, the relative survival is 67% (60/90). By convention, relative survival is described as a rate, although strictly it is a ratio of two percentages.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number and one-year relative survival rate (%)	F	15-99	E, GOR, SHA, CN	2001-03		17C_408PCP1_03_V1
Number and five-year relative survival rate (%)	F	15-99	E, GOR, SHA, CN	2001-03		17C_408PCP2_03_V1

Numerator:

Numerator data - Observed survival rate, derived from the distribution of survival times from the date of diagnosis (of a primary, invasive, malignant neoplasm) to the earliest date among the date of death, the date of emigration, and the cut-off date of follow-up (31 December 2008), for cancer patients who were diagnosed during 2001-03 and resident in England at the time of diagnosis. Analyses published prior to the July 2009 Compendium release include only first primary malignancies. From the July 2009 release onwards, higher order primary malignancies are also retained. The geographical area of each patient is defined by residence at the time of diagnosis. Records with faulty data, and those of patients diagnosed with in situ tumours, tumours uncertain as to whether benign or malignant, metastatic, or uncertain whether primary or metastatic, are excluded from analysis.

Source of numerator data - National Cancer Intelligence Centre (NCIC), Office for National Statistics (ONS) derived from NHS regional cancer registries; National Health Service Central Register.

Comments on numerator data -

Denominator:

Denominator data - The expected survival rate among the cancer patients, derived from life tables specific for the calendar year of death, single year of age, sex, Government Office Region of residence and deprivation.

Source of denominator data - Office for National Statistics (ONS).

Statistical methods:

The cumulative probability of death at a given time since diagnosis, relative to the corresponding probability in the general population, is estimated by comparing the death rates among the cancer patients in successive intervals of time since diagnosis with the all-causes death rate in the general population for the same sex and age group[4]. This is derived from life tables for the Government Office Region in which the patient lives. Life tables were created that were specific for calendar year of death, single year of age, sex, Government Office Region and deprivation. Life tables were constructed for the years 1991, 2001 and 2005 using ONS mid-year population estimates and the mean annual number of deaths in the three years centred on those index years. Life tables for

the intervening years were then created by linear interpolation. The life tables for 2005 were used for years 2006 to 2008 without interpolation.

The relative survival rates for the pooled three-year time period have been directly age-standardised to take into account any variation in relative survival by age. The standard population used is the number of persons who were diagnosed with the particular cancer under consideration in England and Wales during the period 1986-90. These were broken down into three age (at diagnosis) groups: 15-69, 70-79, and 80-99 years.

Rates for different cancers are standardised using different standard populations, and in some instances different age groupings, and should therefore not be compared.

Annex 3 of the *Compendium User Guide*: Explanations of statistical methods used in the *Compendium*.

Interpretation of indicators:

Type of Indicator - The relative survival rate can be interpreted as an estimate of the proportion of cancer patients who die of their disease, after adjustment for death from other causes. A relative survival rate of 100% for a given period would imply that the cancer patients had had the same survival (or death) rates as the general population, not that they had all survived. Similarly, if the relative survival rate remains constant at (say) ten or more years after diagnosis, this implies that the ten-year survivors no longer have higher mortality than the general population.

Quality of indicator - Annex 12 of the *Compendium User Guide* describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Potential value of indicator:

Cancer survival is a broad indicator - differences may be due to a range of factors, of which the quality of treatment is only one. Differences in cancer survival between geographical areas should therefore be the origin of further enquiry, not the basis for simplistic conclusions about the efficacy of cancer treatment. The geographical area of residence at cancer diagnosis is a proxy for several aspects of health care, including the quality of primary care, the speed of referral and the quality of treatment services. It may also be a proxy for other factors, not readily measured, such as the degree of understanding of cancer symptoms and what to do about them among the local population, variations in the extent of disease at diagnosis (stage) and in the histology and grade of tumours, and artefacts in the data. If geographical survival differences can be attributed to differences in knowledge of cancer or the extent of disease at diagnosis, public health responses could be organised. Differences in cancer survival between geographical areas may also "turn out to be due to the persistence of outmoded practices, or other remediable deficiencies in service provision or therapeutic regimes, and correcting these should lead to an improvement in overall standards of care"[5].

Further reading:

A comprehensive monograph on cancer survival in England and Wales has been published[6], covering 2.9 million patients diagnosed with one of 47 adult cancers and 11 childhood cancers during 1971-90, and followed up to the end of 1995. It includes comprehensive analyses by age, sex, and NHS Region, and by socio-economic status (in five categories from affluent to deprived). Updated results for England and Wales have been published in 2004 and 2008 with a chapter for each of the 21 most common cancers. [7, 8] More limited analyses have also been published for cancer patients diagnosed during 1991-93 and followed up to 1998, and diagnosed during 1993-95 and followed up to 2000. [9, 10] Five-year age-standardised relative survival rates for 21 major cancers based on diagnoses in five year periods between 1998 and 2007 are available on the National Statistics website.[11] An early assessment of the impact of the NHS National Cancer Plan on relative survival has been published.[12] An all-cancer relative survival index for patients diagnosed 1991-2006 has been presented by PCT in England.[13] Cancer survival by Cancer Network has been presented for patients diagnosed with one of six cancers 1991-2006.[13]

1. Expert Advisory Group on Cancer. *A policy framework for commissioning cancer services.* London: Department of Health, 1995.
2. NHS Executive. *The new NHS. Modern. Dependable.* London: Department of Health, 1997.
3. Department of Health. *The NHS Cancer Plan: three-year progress report - maintaining the momentum.* London: Department of Health, 2003.
4. Estève J, Benhamou E, Croasdale M, Raymond L. Relative survival and the estimation of net survival: elements for further discussion. *Stat Med* 1990; 9: 529-38.
5. Clinical Outcomes Working Group. *Clinical outcome indicators, July 1996.* Edinburgh: The Scottish Office, 1996.
6. Coleman M.P, Babb P, Damiecki P, Grosclaude P, Honjo S, Jones J et al. *Cancer survival trends in England and Wales 1971-1995: deprivation and NHS Region.* Series SMPS No.61. London: The Stationery Office, 1999, 1-695.
7. Coleman M.P, Rachet B, Woods L.M, Mitry E, Riga M, Cooper N et al. Trends and socioeconomic inequalities in cancer survival in England and Wales up to 2001. *British Journal of Cancer* 2004; 90:1367-1373.

8. Quinn M.j, Cooper N, Rachet B, Mitry E, Woods L.M, Coleman M.P. Survival from cancer of the uterine cervix in England & Wales up to 2001. *British Journal of Cancer* 2008; 99:S59-S62

9. Coleman M.P, Babb P, Harris S, Quinn M.J, Sloggett A, De Stavola B.L. Cancer survival in England and Wales, 1991-1998. *Office for National Statistics Health Statistics Quarterly* 2000; 6: 71-80.

10. Office for National Statistics. Cancer survival in the health authorities of England,1993-2000. Report. *Office for National Statistics Health Statistics Quarterly* 2002;13: 95-103.

11. Office for National Statistics. *Survival Rates in England and Wales, 1998-2001, 1999-2002, 1999-03; Survival Rates in England 2000-04, 2001-06*. National Statistics website. Available at: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=14007&Pos=3&ColRank=1&Rank=422 , accessed 16 September 2010.

12. Rachet B, Maringe C, Nur U, Quaresma M, Shah A, Woods LM, et al. Population-based cancer survival trends in England and Wales up to 2007: an assessment of the NHS cancer plan for England. *Lancet Oncol* 2009;10:351-69.

13. Office for National Statistics. *Cancer survival by cancer network, patients diagnosed 1991-2006, followed up to 2007*. National Statistics website. Available at: http://www.statistics.gov.uk/STATBASE/Product.asp?vlnk=15387. Accessed 15 September 2010.

Updated: October 2010

Deaths at home from cervical cancer

Purpose:

To improve palliative care and service planning for cancer patients in the terminal stages of life, allowing more of them the choice of dying at home.

Definition of indicator and its variants:

The proportion of deaths from cervical cancer (ICD-10 C53) that occur at home.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Percent of deaths at home	F	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		17D_196PC_09_V1
Indirectly age-standardised deaths at home rate per 100 deaths and number of deaths at home	F	All Ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		17D_196ISR_09_V1

Numerator:

Numerator data - Deaths at home from cervical cancer, classified by underlying cause of death (ICD-10 C53), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data – Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

Information about the place of death is found on the mortality record in the communal establishment field. It contains one of:

- a 5 digit code identifying a communal establishment or institution (e.g. hospital, nursing home, residential home);
- an "H" code which indicates that the person is certified as having died at their home address and that this is not a communal establishment or;
- an "E" code which indicates that the person died elsewhere.

The communal establishments are themselves classified into 84 categories (e.g. general hospital, mental nursing home, nursing home etc) and can be further distinguished by whether they are an NHS or Non-NHS establishment.

It is currently ONS practice to include nursing homes with hospitals under a broader group - "Other hospitals and communal establishments for the care of the sick" - and also to include residential homes under "Other communal establishments". This is because of concerns highlighted by the ONS regarding the accuracy of the recorded status of some communal establishments, particularly nursing homes and residential homes.

It is therefore not possible to include nursing home or residential home deaths as a "home" death. For this indicator, a "home" death is defined as one that has the "H" code in the communal establishment field, i.e. where the death has occurred at the home address and that address is not of a communal establishment.

Denominator:

Denominator data - All deaths from cervical cancer, classified by underlying cause of death (ICD-10 C53), registered in the respective calendar year(s).

Source of denominator data - ONS.

Comments on denominator data - Includes deaths in all categories of communal establishment code, i.e. deaths in all communal establishments, at home, and elsewhere.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*. See Annex 2 for more details.

Statistical methods:

The age-standardised deaths at home rate utilises the indirect method of standardisation. The direct method was found not to be robust as it was affected by small numerator and denominator counts in specific age groups.

Indirect standardisation requires the computation of the ratio of an area's observed number of events to its expected number of events if it had experienced the standard age-specific rates. This age-standardised ratio can be converted into a rate by multiplying it by the crude rate of the standard population.

The standard rates used are those of England for the respective calendar year(s). Male and female rates have been standardised separately. The rate for persons is standardised for both age and sex.

This methodology is similar to that used for the Clinical Indicators and is described in detail in:

Annex 3: Explanations of statistical methods used in the *Compendium* (under the sections entitled "Indirectly Standardised Rates For Clinical Indicators" and "Confidence Intervals Of Indirectly Standardised Rates For Clinical Indicators").

Interpretation of indicators:

Type of Indicator - This is a condition-specific cross-sectional comparative indicator reflecting events which act as a proxy for outcome (quality of dying). In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable areas.

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - 95%. Some of the values and factors influencing them may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of deaths may be small at individual organisational level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% probability, will contain the underlying value of the indicator. If the confidence interval for an organisation's rate is outside the range of the national confidence intervals, the difference between the two rates is considered statistically significant. If the confidence intervals for two rates overlap, in most cases the difference between the rates would not be considered statistically significant.

Effect of Case-Mix / severity - Severity of the cancer and need for hospital care have implications for those who wish to die at home being able to do so. The data available do not allow adjustment for these factors.

Other Potential Confounding Factors - A number of factors outside the control of the NHS such as personal choice, availability of hospices, and family/community support may contribute to the variation shown by the indicator.

Relevant National initiatives:

1. Department of Health. *End of life care strategy : Promoting high quality care for all adults at the end of life*. London: Department of Health , 2008.
   http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_086277
2. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service*. London: Department of Health, 2004.
3. Department of Health. *Pioneering Schemes Named Best of the Best. NHS Beacons – Part of a Concerted Campaign to Improve Cancer Services.* Department of Health, 1999. Press release: reference 1999/0375
4. Commission for Health Improvement. *NHS Cancer Care in England and Wales. National Service Framework Assessments No.1*. London: Commission for Health Improvement, 2001.

Further reading:

1. Higginson I.J, Thompson M. Children and young people who die from cancer: epidemiology and place of death in England (1995-9). *British Medical Journal* 2003; 327: 478-479.
2. Grande GE, Todd CJ, Barclay SIG, Farquhar MC. Does hospital at home for palliative care facilitate death at home? Randomised controlled trial. *British Medical Journal* 1999; 319: 1472-1475.
3. Higginson I.J, Jarman B, Astin P, Dolan S. Do social factors affect where patients die: an analysis of 10 years of cancer deaths in England. *Journal of Public Health Medicine* 1999; 21(1): 23-28.

Updated: March 2011

Cervical screening programme coverage

Purpose:

To reduce the incidence of, and mortality from, invasive cervical cancer. Cervical screening is not a test for cancer. It is a method of preventing cancer by detecting and treating early abnormalities which, if left untreated, could lead to cancer in a woman's cervix (the neck of the womb). Early detection and treatment can prevent 80 to 90 per cent of cancers developing. National policy for the screening programme is that eligible women between the ages of 25 and 64 years should be screened every 3 to 5 years. This varies according to age, women aged 25-49 are invited every 3 years, those aged 50-64 every 5 years. Since 2003, women have been eligible for routine screening from age 25 (previously age 20).

Definition of indicator and its variants:

The coverage of the screening programme is defined as the proportion of women eligible for screening who have had a test with a recorded result at least once in the previous 5 years (age groups 25-64 and 50-64 years) or 3.5 years (age group 25-49 years). Women ineligible for screening, and therefore excluded from both the numerator and denominator of the coverage calculation, are those whose recall has been ceased for clinical reasons (e.g. those who have had a hysterectomy). Coverage of the screening programme continues to be assessed using the 25-64 year age group as previously used when women were first called at any time between their 20th and 25th birthdays.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Percent	F	25-64	E, GOR, SHA, PCO	2010		17E_427PCP1_10_V1
		25-49		2010		17E_427PCP2_10_V1
		50-64		2010		17E_427PCP3_10_V1

Numerator:

Numerator data - Eligible women recorded as having had a test with a recorded result at least once in the previous 5 years (age groups 25-64 and 50-64 years) or 3.5 years (age group 25-49 years) at 31 March for the respective year.

Source of numerator data - The NHS Information Centre for health and social care. Cervical Screening Programme, England: 2009-10. Leeds: The NHS Information Centre for health and social care, 2010.

Comments on numerator data - Local level coverage is calculated for Primary Care Organisations (PCOs). Although PCOs have a defined geographical boundary, the populations used are NOT those of women resident within the PCO boundaries. Instead, the populations of women for whom each of the PCOs is responsible are used. Where women on the call/recall screening register are not registered with a GP at the time coverage is calculated they are allocated to a PCO on a geographical basis. Similarly, the populations used for Strategic Health Authorities and Government Office Regions are NOT those of women resident within their boundaries, but are the aggregates of the responsible populations of their constituent PCOs.

PCOs report the population coverage of the screening programme on the NHS Information Centre for health and social care return KC53.

Denominator:

Denominator data - Eligible women. Responsible population estimates based on Exeter System GP lists as at 31 March for the respective year, less the number of women recorded as ineligible.

Source of denominator data - The NHS Information Centre for health and social care.

Comments on denominator data - See "Comments on numerator data".

Statistical methods:

Annex 3: Explanations of statistical methods used in the *Compendium*

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - 95%. Some of the values and factors influencing them may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of deaths may be small at individual organisational level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% probability, will contain the underlying value of the indicator. If the confidence interval for an organisation's rate is outside the range of the national confidence intervals, the difference between the two rates is considered statistically significant. If the confidence intervals for two rates overlap, in most cases the difference between the rates would not be considered statistically significant.

Further reading:

1. NHS Cancer Screening Programmes Web Site: http://www.cancerscreening.nhs.uk
2. NHS Information Centre for health and social care web site: NHS Cervical Screening Programme statistics: http://www.cancerscreening.nhs.uk/cervical/statistics.html
3. NHS. *NHS Cervical Screening Programme Annual Review 2009.* Sheffield: NHS Cancer Screening Programmes, 2009. Available at: http://www.cancerscreening.nhs.uk/cervical/publications/cervical-annual-review-2009.pdf
4. Department of Health. *The NHS Cancer Plan.* London: The Stationery Office, 2000.
5. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service.* London: Department of Health, 2004.

Updated: November 2010

Cytology: cervical cancer screening

Purpose:

To help reduce the level of risk of cervical cancer for NHS patients and ensure high standards of primary health care and treatment delivered to them.

Cervical cancer screening is a regular early detection intervention for women. Primary care is central to the overall success of the cervical screening programme. General practitioners are in a unique position to invite women for a smear test, to take smears, to ensure that abnormal smear test results are followed up, and to check on reasons for non-attendance. Numerous studies have looked at the involvement of general practice in cervical screening, identifying many ways in which the programme can be improved. Many practices are now running well organised and effective programmes.

Definition of indicator and its variants:

Proportion of female patients aged 25 to 64 years whose notes record that a cervical smear test has been performed in the last five years.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	F	25-64	E, GOR, SHA, PCO	FY 2009/10		17F_654PC_10_V1

Numerator:

Numerator data - Female patients whose notes record a cervical smear test performed in the five years before the reference date.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All female patients aged 25-64 years excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- a record of hysterectomy;
- cervical cytology exception reported in the five years before the reference date;
- registered in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
4. NHS Employers and General Practitioners Committee BMA. *Quality and Outcomes Framework guidance for GMS contract 2008/09*, April 2008. Available at: http://www.nhsemployers.org/SiteCollectionDocuments/QUALITY_OUT_COMPLETE_CD_110209.pdf
5. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Statistics for England 2007/08*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2007-08/QOF%20200708%20Statistical%20Bulletin.pdf
6. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07.* Available at: http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf
7. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework or England 2005/06.* Available at: http://www.ic.nhs.uk/webfiles/publications/qof/NationalQualityOutcomesFramework280906_PDF.pdf
8. The Health and Social Care Information Centre, *National Quality and Outcomes Framework Statistics for England 2004/05*. Available at: http://www.ic.nhs.uk/webfiles/publications/qof0405/QOF0405_Statistical_Bulletin.pdf
9. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68
10. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
11. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf
12. Austoker J. Cancer Prevention in Primary Care: Screening for cervical cancer. *BMJ*, 1994, 309:241-248. Available at: http://www.bmj.com/cgi/content/full/309/6949/241

Updated: June 2011

Years of life lost due to mortality from cervical cancer

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from cervical cancer (ICD-10 C53).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	F	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		17G_041CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	F	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		17G_041DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from cervical cancer classified by underlying cause of death (ICD-10 C53), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

   Annex 2: Changes to Office for National Statistics mortality data
   Annex 3: Explanations of statistical methods used in the *Compendium*
   Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service.* London: Department of Health, 2004.
2. Brock A, Griffiths C. Trends in the mortality of young adults aged 15-44 in England and Wales, 1961-2001. *Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 22-31. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf
3. World Health Organization. *WHO Framework on Tobacco Control*. Geneva: World Health Organization, 2003. Available at: http://www.who.int/tobacco/fctc/text/en/fctc_en.pdf
4. Department of Health. *NHS Cancer Plan.* London: Department of Health, 2000.
5. NHS. *Manual of Cancer Services Standards*. London: NHS Executive, 2000.
6. Department of Health. *Saving lives: Our Healthier Nation.* London: The Stationery Office, 1999.
7. World Bank. *Economics of Tobacco Control*. Washington: World Bank, 1999. Available at: http://www1.worldbank.org/tobacco/book/pdf/tobacco.pdf
8. Department of Health. *Smoking kills – a White Paper on tobacco*. London: The Stationery Office, 1998.

Updated: March 2011

Incidence of colorectal cancer

Purpose:

To reduce the incidence of colorectal cancer.

Definition of indicator and its variants:

Registrations for colorectal cancer (ICD-10 C17-C21 equivalent to ICD-9 152-154).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Indirectly age-standardised registration ratio (SRR) and number of registrations	MFP	All ages <75	E&W, E, GOR, ONS area, SHA, LA, PCO	2006-08		13A_046SR00++_08_V1 13A_046SR0074_08_V1
		All ages			1993-08	13A_046SRT00++_08_V1
Directly age-standardised registration rate and number of registrations	MFP	All ages <75 All ages	E&W, E, GOR, ONS area, SHA, LA, PCO	2006-08	1993-08	13A_046DR00++_08_V1 13A_046DR0074_08_V1 13A_046DRT00++_08_V1

Numerator:

Numerator data - Cancer registrations for colorectal cancer (ICD-10 C17-C21, ICD-9 152-154) in the respective calendar years.

Source of numerator data - Regional Cancer Registries and Office for National Statistics (ONS).

Comments on numerator data - Registration data for years 1993-2005 were extracted by ONS in November 2008. Data for 2006 are as registered by the end of September 2008. The data extracts for 2007 and 2008 are the same as used for the respective ONS Annual Reference Volume (series MB1). For all years 1993 to 2006 organisational codes were assigned using the postcode of usual residence and the August 2008 edition of the National Statistics Postcode Directory. Years 2007 and 2008 used the May 2010 and November 2010 editions respectively. Results in the current *Compendium* may differ from those of previous issues because of changes in methodology to extract data by area, and also because of data enhancements by ONS. Cancer registrations are also continuously being updated retrospectively and ONS records may have been updated since previous analyses.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 3: Explanations of statistical methods used in the *Compendium*

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Anonymous. *Advances in reducing colorectal cancer risk. Colorectal cancer is the third most common cancer in women and the second leading cause of cancer death. These statistics belie how preventable this disease really is*. Harv Womens Health Watch 2003;10(9):1-2.
2. Urbach DR, Bell CM, Austin PC. *Differences in operative mortality between high- and low-volume hospitals in Ontario for 5 major surgical procedures: estimating the number of lives potentially saved through regionalization.* Cmaj 2003;168(11):1409-14.
3. Kuper H, Boffetta P, Adami H-O. *Tobacco use and cancer causation: association by tumour type.* J Intern Med 2002;252(3):206-224.
4. NHS. *Improving Outcomes in Colorectal Cancer - The Research Evidence*. Department of Health, 2001.

5. NHS. *Improving Outcomes in Colorectal Cancer - The Manual.* London: Department of Health, 1997.
6. ONS. *Cancer Statistics Registrations - Registrations of cancer diagnosed in 2008, England.* Series MB1 No 39. London: ONS, 2010. Available at: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=8843

Updated: June 2011

Mortality from colorectal cancer

Purpose:

To reduce deaths from colorectal cancer.

Definition of indicator and its variants:

Mortality from colorectal cancer (ICD-10 C17-C21 equivalent to ICD-9 152-154).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		13B_047NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		13B_047CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	F	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		13B_047SM00++_09_V1 13B_047SM0074_09_V1
		All ages			1993-09	13B_047SMT00++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	F	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		13B_047DR00++_09_V1 13B_047DR0074_09_V1
		All ages			1993-09	13B_047DRT00++_09_V1

Numerator:

Numerator data - Deaths from colorectal cancer, classified by underlying cause of death (ICD-10 C17-C21, ICD-9 152-154 adjusted), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males	0-74yrs: 1.008	75-84yrs: 1.007	85+yrs: 1.048
Females	0-74yrs: 0.999	75-84yrs: 1.017	85+yrs: 1.033

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service.* London: Department of Health, 2004.
2. World Health Organization. *WHO Framework on Tobacco Control*. Geneva: World Health Organization, 2003. Available at: http://www.who.int/tobacco/fctc/text/en/fctc_en.pdf
3. NHS. *Improving Outcomes in Colorectal Cancer The Research Evidence*. NHS Executive, 2001.
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5. NHS. *Manual of Cancer Services Standards.* London: NHS Executive, 2000.
6. Department of Health. *Saving lives: Our Healthier Nation.* London: The Stationery Office, 1999.
7. Department of Health. *Smoking kills – a White Paper on tobacco*. London: The Stationery Office, 1998.
8. NHS. *Improving Outcomes in Colorectal Cancer The Manual*. London: NHS Executive, 1997.

Updated: March 2011

Survival following diagnosis of colon cancer

Purpose:

To provide comparative measures of the outcome of cancer treatment by area of residence, using geographical variations in cancer survival. Cancer survival is a key operational measure of the success of cancer treatment services. The principle of equity of access to optimal standards of National Health Service (NHS) cancer treatment was explicitly endorsed in the Calman-Hine report of 1995, which noted: "*All patients should have access to a uniformly high quality of care in the community or hospital wherever they may live to ensure the maximum possible cure rates and best quality of life*"[1]. A further policy document stated that from April 1999, patients with suspected breast cancer "*will be able to see a specialist within two weeks of their GP deciding they need to be seen urgently, and requesting an appointment*"[2]. Similar commitments have come into force for other cancers since April 2000. These policies are expected to lead to earlier diagnosis for all patients and more equitable access to treatment. The NHS Cancer Plan extended these commitments to improve cancer survival in England to amongst the best in Europe[3]. Cancer survival rates are outcome measures that can form part of the baseline for monitoring the future impact of these policies. Geographic differences in cancer survival are expected to decline over time if policy goals are achieved.

Definition of indicator and its variants:

Relative survival rate at one and five years after diagnosis for patients diagnosed in England during 2001-03 and followed up to the end of the year 2008. Cancer patients have higher mortality than the general population, but they do not all die of cancer. The relative survival rate is the ratio of the survival rate actually observed among the cancer patients and the survival rate that would have been expected if they had only had the same overall mortality rates as the general population. Thus, if five-year survival is 60% among a group of cancer patients of whom 90% would have been expected to survive that long, the relative survival is 67% (60/90). By convention, relative survival is described as a rate, although strictly it is a ratio of two percentages.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number and one-year relative survival rate (%)	MFP	15-99	E, GOR, SHA, CN	2001-03		13C_410PCP1_03_V1
Number and five-year relative survival rate (%)	MFP	15-99	E, GOR, SHA, CN	2001-03		13C_410PCP2_03_V1

Numerator:

Numerator data - Observed survival rate, derived from the distribution of survival times from the date of diagnosis (of a primary, invasive, malignant neoplasm) to the earliest date among the date of death, the date of emigration, and the cut-off date of follow-up (31 December 2008), for cancer patients who were diagnosed during 2001-03 and resident in England at the time of diagnosis. Analyses published prior to the July 2009 Compendium release include only first primary malignancies. From the July 2009 release onwards, higher order primary malignancies are also retained. The geographical area of each patient is defined by residence at the time of diagnosis. Records with faulty data, and those of patients diagnosed with in situ tumours, tumours uncertain as to whether benign or malignant, metastatic, or uncertain whether primary or metastatic, are excluded from analysis.

Source of numerator data - National Cancer Intelligence Centre (NCIC), Office for National Statistics (ONS) derived from NHS regional cancer registries; National Health Service Central Register.

Comments on numerator data -

Denominator:

Denominator data - The expected survival rate among the cancer patients, derived from life tables specific for the calendar year of death, single year of age, sex, Government Office Region of residence and deprivation.

Source of denominator data - Office for National Statistics (ONS).

Statistical methods:

The cumulative probability of death at a given time since diagnosis, relative to the corresponding probability in the general population, is estimated by comparing the death rates among the cancer patients in successive intervals of time since diagnosis with the all-causes death rate in the general population for the same sex and age group[4]. This is derived from life tables for the Government Office Region in which the patient lives. Life tables were created that were specific for calendar year of death, single year of age, sex, Government Office Region and deprivation. Life tables were constructed for the years 1991, 2001 and 2005 using ONS mid-year population estimates and the mean annual number of deaths in the three years centred on those index years. Life tables for

the intervening years were then created by linear interpolation. The life tables for 2005 were used for years 2006 to 2008 without interpolation.

The relative survival rates for the pooled three-year time period have been directly age-standardised to take into account any variation in relative survival by age. The standard population used is the number of persons who were diagnosed with the particular cancer under consideration in England and Wales during the period 1986-90. These were broken down into three age (at diagnosis) groups: 15-69, 70-79, and 80-99 years.

Male, female, and person relative survival rates are age-standardised using the same person standard population and may therefore be compared against each other. Rates for different cancers, however, are standardised using different standard populations, and in some instances different age groupings, and should therefore not be compared.

Annex 3 of the *Compendium User Guide*: Explanations of statistical methods used in the *Compendium*.

Interpretation of indicators:

Type of Indicator - The relative survival rate can be interpreted as an estimate of the proportion of cancer patients who die of their disease, after adjustment for death from other causes. A relative survival rate of 100% for a given period would imply that the cancer patients had had the same survival (or death) rates as the general population, not that they had all survived. Similarly, if the relative survival rate remains constant at (say) ten or more years after diagnosis, this implies that the ten-year survivors no longer have higher mortality than the general population.

Quality of indicator - Annex 12 of the *Compendium User Guide* describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Potential value of indicator:

Cancer survival is a broad indicator - differences may be due to a range of factors, of which the quality of treatment is only one. Differences in cancer survival between geographical areas should therefore be the origin of further enquiry, not the basis for simplistic conclusions about the efficacy of cancer treatment. The geographical area of residence at cancer diagnosis is a proxy for several aspects of health care, including the quality of primary care, the speed of referral and the quality of treatment services. It may also be a proxy for other factors, not readily measured, such as the degree of understanding of cancer symptoms and what to do about them among the local population, variations in the extent of disease at diagnosis (stage) and in the histology and grade of tumours, and artefacts in the data. If geographical survival differences can be attributed to differences in knowledge of cancer or the extent of disease at diagnosis, public health responses could be organised. Differences in cancer survival between geographical areas may also "turn out to be due to the persistence of outmoded practices, or other remediable deficiencies in service provision or therapeutic regimes, and correcting these should lead to an improvement in overall standards of care"[5].

Further reading:

A comprehensive monograph on cancer survival in England and Wales has been published[6], covering 2.9 million patients diagnosed with one of 47 adult cancers and 11 childhood cancers during 1971-90, and followed up to the end of 1995. It includes comprehensive analyses by age, sex, and NHS Region, and by socio-economic status (in five categories from affluent to deprived). Updated results for England and Wales have been published in 2004 and 2008 with a chapter for each of the 21 most common cancers. [7, 8] More limited analyses have also been published for cancer patients diagnosed during 1991-93 and followed up to 1998, and diagnosed during 1993-95 and followed up to 2000. [9, 10] Five-year age-standardised relative survival rates for 21 major cancers based on diagnoses in five year periods between 1998 and 2007 are available on the National Statistics website.[11] An early assessment of the impact of the NHS National Cancer Plan on relative survival has been published.[12] An all-cancer relative survival index for patients diagnosed 1991-2006 has been presented by PCT in England.[13] Cancer survival by Cancer Network has been presented for patients diagnosed with one of six cancers 1991-2006.[13]

1. Expert Advisory Group on Cancer. *A policy framework for commissioning cancer services.* London: Department of Health, 1995.
2. NHS Executive. *The new NHS. Modern. Dependable.* London: Department of Health, 1997.
3. Department of Health. *The NHS Cancer Plan: three-year progress report - maintaining the momentum.* London: Department of Health, 2003.
4. Estève J, Benhamou E, Croasdale M, Raymond L. Relative survival and the estimation of net survival: elements for further discussion. *Stat Med* 1990; 9: 529-38.
5. Clinical Outcomes Working Group. *Clinical outcome indicators, July 1996.* Edinburgh: The Scottish Office, 1996.
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7. Coleman M.P, Rachet B, Woods L.M, Mitry E, Riga M, Cooper N et al. Trends and socioeconomic inequalities in cancer survival in England and Wales up to 2001. British Journal of Cancer 2004; 90:1367-1373.

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9. Coleman M.P, Babb P, Harris S, Quinn M.J, Sloggett A, De Stavola B.L. Cancer survival in England and Wales, 1991-1998. *Office for National Statistics Health Statistics Quarterly* 2000; 6: 71-80.

10. Office for National Statistics. Cancer survival in the health authorities of England,1993-2000. Report. *Office for National Statistics Health Statistics Quarterly* 2002;13: 95-103.

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13. Office for National Statistics. *Cancer survival by cancer network, patients diagnosed 1991-2006, followed up to 2007*. National Statistics website. Available at: http://www.statistics.gov.uk/STATBASE/Product.asp?vlnk=15387. Accessed 15 September 2010.

Updated: October 2010

Deaths at home from colorectal cancer

Purpose:

To improve palliative care and service planning for cancer patients in the terminal stages of life, allowing more of them the choice of dying at home.

Definition of indicator and its variants:

The proportion of deaths from colorectal cancer (ICD-10 C17-C21) that occur at home.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Percent of deaths at home	MFP	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		13D_193PC_09_V1
Indirectly age-standardised deaths at home rate per 100 deaths and number of deaths at home	MFP	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		13D_193ISR_09_V1

Numerator:

Numerator data - Deaths at home from colorectal cancer, classified by underlying cause of death (ICD-10 C17-C21), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

Information about the place of death is found on the mortality record in the communal establishment field. It contains one of:

- a 5 digit code identifying a communal establishment or institution (e.g. hospital, nursing home, residential home);
- an "H" code which indicates that the person is certified as having died at their home address and that this is not a communal establishment or;
- an "E" code which indicates that the person died elsewhere.

The communal establishments are themselves classified into 84 categories (e.g. general hospital, mental nursing home, nursing home etc) and can be further distinguished by whether they are an NHS or Non-NHS establishment.

It is currently ONS practice to include nursing homes with hospitals under a broader group - "Other hospitals and communal establishments for the care of the sick" - and also to include residential homes under "Other communal establishments". This is because of concerns highlighted by the ONS regarding the accuracy of the recorded status of some communal establishments, particularly nursing homes and residential homes.

It is therefore not possible to include nursing home or residential home deaths as a "home" death. For this indicator, a "home" death is defined as one that has the "H" code in the communal establishment field, i.e. where the death has occurred at the home address and that address is not of a communal establishment.

Denominator:

Denominator data - All deaths from colorectal cancer, classified by underlying cause of death (ICD-10 C17-C21), registered in the respective calendar year(s).

Source of denominator data - ONS.

Comments on denominator data - Includes deaths in all categories of communal establishment code, i.e. deaths in all communal establishments, at home, and elsewhere.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*. See Annex 2 for more details.

Statistical methods:

The age-standardised deaths at home rate utilises the indirect method of standardisation. The direct method was found not to be robust as it was affected by small numerator and denominator counts in specific age groups.

Indirect standardisation requires the computation of the ratio of an area's observed number of events to its expected number of events if it had experienced the standard age-specific rates. This age-standardised ratio can be converted into a rate by multiplying it by the crude rate of the standard population.

The standard rates used are those of England for the respective calendar year(s). Male and female rates have been standardised separately. The rate for persons is standardised for both age and sex.

This methodology is similar to that used for the Clinical Indicators and is described in detail in:

Annex 3: Explanations of statistical methods used in the *Compendium* (under the sections entitled "Indirectly Standardised Rates For Clinical Indicators" and "Confidence Intervals Of Indirectly Standardised Rates For Clinical Indicators").

Interpretation of indicators:

Type of Indicator - This is a condition-specific cross-sectional comparative indicator reflecting events which act as a proxy for outcome (quality of dying). In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable areas.

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - 95%. Some of the values and factors influencing them may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of deaths may be small at individual organisational level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% probability, will contain the underlying value of the indicator. If the confidence interval for an organisation's rate is outside the range of the national confidence intervals, the difference between the two rates is considered statistically significant. If the confidence intervals for two rates overlap, in most cases the difference between the rates would not be considered statistically significant.

Effect of Case-Mix / severity - Severity of the cancer and need for hospital care have implications for those who wish to die at home being able to do so. The data available do not allow adjustment for these factors.

Other Potential Confounding Factors - A number of factors outside the control of the NHS such as personal choice, availability of hospices, and family/community support may contribute to the variation shown by the indicator.

Relevant National initiatives:

1. Department of Health. *End of life care strategy : Promoting high quality care for all adults at the end of life*. London: Department of Health , 2008. http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_086277
2. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service*. London: Department of Health, 2004.
3. Department of Health. *Pioneering Schemes Named Best of the Best. NHS Beacons – Part of a Concerted Campaign to Improve Cancer Services*. Department of Health, 1999. Press release: reference 1999/0375
4. Commission for Health Improvement. *NHS Cancer Care in England and Wales. National Service Framework Assessments No.1*. London: Commission for Health Improvement, 2001.

Further reading:

1. Higginson I.J, Thompson M. Children and young people who die from cancer: epidemiology and place of death in England (1995-9). *British Medical Journal* 2003; 327: 478-479.
2. Grande GE, Todd CJ, Barclay SIG, Farquhar MC. Does hospital at home for palliative care facilitate death at home? Randomised controlled trial. *British Medical Journal* 1999; 319: 1472-1475.
3. Higginson I.J, Jarman B, Astin P, Dolan S. Do social factors affect where patients die: an analysis of 10 years of cancer deaths in England. *Journal of Public Health Medicine* 1999; 21(1): 23-28.

Updated: March 2011

Years of life lost due to mortality from colorectal cancer

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from colorectal cancer (ICD-10 C17-C21).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		13F_042CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		13F_042DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from colorectal cancer classified by underlying cause of death (ICD-10 C17-C21), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

    Annex 2: Changes to Office for National Statistics mortality data
    Annex 3: Explanations of statistical methods used in the *Compendium*
    Annex 5: European Standard Population

Interpretation of indicators:

    Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service.* London: Department of Health, 2004.
2. World Health Organization. *WHO Framework on Tobacco Control*. Geneva: World Health Organization, 2003. Available at: http://www.who.int/tobacco/fctc/text/en/fctc_en.pdf
3. NHS. *Improving Outcomes in Colorectal Cancer The Research Evidence*. NHS Executive, 2001.
4. Department of Health. *NHS Cancer Plan*. London: Department of Health, 2000.
5. NHS. *Manual of Cancer Services Standards.* London: NHS Executive, 2000.
6. Department of Health. *Saving lives: Our Healthier Nation.* London: The Stationery Office, 1999.
7. Department of Health. *Smoking kills – a White Paper on tobacco*. London: The Stationery Office, 1998.
8. NHS. *Improving Outcomes in Colorectal Cancer The Manual*. London: NHS Executive, 1997.

Updated: March 2011

Mortality from Hodgkin's disease

Purpose:

To reduce deaths from Hodgkin's disease.

Definition of indicator and its variants:

Mortality from Hodgkin's disease (ICD-10 C81 equivalent to ICD-9 201).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		20A_078NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		20A_078CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	F	All ages, <75, 5-64	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		20A_078SM00++_09_V1 20A_078SM0074_09_V1 20A_078SM0564_09_V1
		All ages			1993-09	20A_078SMT00++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	F	All ages, <75, 5-64	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		20A_078DR00++_09_V1 20A_078DR0074_09_V1 20A_078DR0564_09_V1
		All ages			1993-09	20A_078DRT00++_09_V1

Numerator:

Numerator data - Deaths from Hodgkin's disease, classified by underlying cause of death (ICD-10 C81, ICD-9 201 adjusted), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the Office for National Statistics. Trend data cannot include years prior to 1993, because the Office for National Statistics introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males　　　　All Ages: 1
Females　　　All Ages: 1.079

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health Cancer pages. Available at:
   http://www.dh.gov.uk/PolicyAndGuidance/HealthAndSocialCareTopics/Cancer/fs/en
2. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service.* London: Department of Health, 2004.
3. Department of Health. *NHS Cancer Plan.* London: Department of Health, 2000.
4. NHS Executive. *Manual of Cancer Services Standards*. London: NHS Executive, 2000.
5. Department of Health. *Saving lives: Our Healthier Nation*. London: The Stationery Office, 1999.

Updated: March 2011

Years of life lost due to mortality from Hodgkin's disease

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from Hodgkin's disease (ICD-10 C81).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		20B_048CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		20B_048DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from Hodgkin's disease classified by underlying cause of death (ICD-10 C81), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health Cancer pages. Available at:
   http://www.dh.gov.uk/PolicyAndGuidance/HealthAndSocialCareTopics/Cancer/fs/en
2. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service.* London: Department of Health, 2004.
3. Department of Health. *NHS Cancer Plan.* London: Department of Health, 2000.
4. NHS Executive. *Manual of Cancer Services Standards.* London: NHS Executive, 2000.
5. Department of Health. *Saving lives: Our Healthier Nation.* London: The Stationery Office, 1999.

Updated: March 2011

Mortality from leukaemia

Purpose:

To reduce deaths from leukaemia.

Definition of indicator and its variants:

Mortality from leukaemia (ICD-10 C91-C95 equivalent to ICD-9 204-208).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		21A_103NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		21A_103CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	F	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		21A_103SM00++_09_V1 21A_103SM0074_09_V1
		All ages			1993-09	21A_103SMT00++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	F	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		21A_103DR00++_09_V1 21A_103DR0074_09_V1
		All ages			1993-09	21A_103DRT00++_09_V1

Numerator:

Numerator data - Deaths from leukaemia, classified by underlying cause of death (ICD-10 C91-C95, ICD-9 204-208 adjusted), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males   All Ages: 1.061
Females   All Ages: 1.049

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service*. London: Department of Health, 2004.
2. World Health Organization. *WHO Framework on Tobacco Control*. Geneva: World Health Organization, 2003. Available at: http://www.who.int/tobacco/fctc/text/en/fctc_en.pdf
3. NHS Executive. *Manual of Cancer Services Standards*. London: NHS Executive, 2000.
4. Department of Health. *NHS Cancer Plan*. London: Department of Health, 2000.
5. Department of Health. *Saving lives: Our Healthier Nation.* London: The Stationery Office, 1999.
6. World Bank. *Economics of Tobacco Control*. Washington: World Bank, 1999. Available at: http://www1.worldbank.org/tobacco/book/pdf/tobacco.pdf
7. Department of Health. *Smoking kills – a White Paper on tobacco*. London: The Stationery Office, 1998.

Updated: March 2011

Years of life lost due to mortality from leukaemia

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from leukaemia (ICD-10 C91-C95).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		21B_049CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		21B_049DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from leukaemia classified by underlying cause of death (ICD-10 C91-C95), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service*. London: Department of Health, 2004.
2. World Health Organization. *WHO Framework on Tobacco Control*. Geneva: World Health Organization, 2003. Available at: http://www.who.int/tobacco/fctc/text/en/fctc_en.pdf
3. NHS Executive. *Manual of Cancer Services Standards*. London: NHS Executive, 2000.
4. Department of Health. *NHS Cancer Plan*. London: Department of Health, 2000.
5. Department of Health. *Saving lives: Our Healthier Nation.* London: The Stationery Office, 1999.
6. World Bank. *Economics of Tobacco Control*. Washington: World Bank, 1999. Available at: http://www1.worldbank.org/tobacco/book/pdf/tobacco.pdf
7. Department of Health. *Smoking kills – a White Paper on tobacco*. London: The Stationery Office, 1998.

Updated: March 2011

Incidence of lung cancer

Purpose:

To reduce the incidence of lung cancer.

Definition of indicator and its variants:

Registrations for lung cancer (ICD-10 C33-C34 equivalent to ICD-9 162).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Indirectly age-standardised registration ratio (SRR) and number of registrations	MFP	All ages <75	E&W, E, GOR, ONS area, SHA, LA, PCO	2006-08		14A_104SR00++_08_V1 14A_104SR0074_08_V1
		All ages			1993-08	14A_104SRT00++_08_V1
Directly age-standardised registration rate and number of registrations	MFP	All ages <75	E&W, E, GOR, ONS area, SHA, LA, PCO	2006-08		14A_104DR00++_08_V1 14A_104DR0074_08_V1
		All ages			1993-08	14A_104DRT00++_08_V1

Numerator:

Numerator data - Cancer registrations for lung cancer (ICD-10 C33-C34, ICD-9 162) in the respective calendar years.

Source of numerator data - Regional Cancer Registries and the Office for National Statistics (ONS).

Comments on numerator data - Registration data for years 1993-2005 were extracted by ONS in November 2008. Data for 2006 are as registered by the end of September 2008. The data extracts for 2007 and 2008 are the same as used for the respective ONS Annual Reference Volume (series MB1). For all years 1993 to 2006 organisational codes were assigned using the postcode of usual residence and the August 2008 edition of the National Statistics Postcode Directory. Years 2007 and 2008 used the May 2010 and November 2010 editions respectively. Results in the current *Compendium* may differ from those of previous issues because of changes in methodology to extract data by area, and also because of data enhancements by ONS. Cancer registrations are also continuously being updated retrospectively and ONS records may have been updated since previous analyses.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 3: Explanations of statistical methods used in the *Compendium*

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service.* London: Department of Health, 2004.
2. Department of Health. *Improving Outcomes in Lung Cancer - The Manual.* London: Department of Health, 1998.
3. Department of Health. *Improving Outcomes in Lung Cancer - The Research Evidence*. London: Department of Health, 1998.
4. ONS. *Cancer Statistics Registrations - Registrations of cancer diagnosed in 2008, England.* Series MB1 No 39. London: ONS, 2010. Available at: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=8843

Updated: June 2011

Mortality from lung cancer

Purpose:

To reduce deaths from lung cancer.

Definition of indicator and its variants:

Mortality from lung cancer (ICD-10 C33-C34 equivalent to ICD-9 162).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		14B_105NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		14B_105CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		14B_105SM00++_09_V1 14B_105SM0074_09_V1
		All ages <75			1993-09	14B_105SMT00++_09_V1 14B_105SMT0074_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		14B_105DR00++_09_V1 14B_105DR0074_09_V1
		All ages <75			1993-09	14B_105DRT00++_09_V1 14B_105DRT0074_09_V1

Numerator:

Numerator data - Deaths from lung cancer, classified by underlying cause of death (ICD-10 C33-C34, ICD-9 162 adjusted), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

The directly age-standardised mortality rates from lung cancer for men and women aged under 75 were target indicators in the *Health of the Nation* (See "Further reading").

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males   All Ages: 0.996
Females   All Ages: 0.996

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population
Annex 6: Goals of *Our Healthier Nation*

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. World Health Organization. *WHO Tobacco Free Initiative*. Available at: http://www.who.int/tobacco/en/
2. World Health Organization. *WHO Framework Convention on Tobacco Control.* Geneva: World Health Organization, 2003. Available at http://www.who.int/tobacco/fctc/text/en/fctc_en.pdf
3. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service.* London: Department of Health, 2004.
4. NHS Executive. *Manual of Cancer Services Standards*. London: NHS Executive, 2000.
5. Department of Health. *NHS Cancer Plan*. London: Department of Health, 2000.
6. World Bank. *Economics of Tobacco Control*. Wasthington: World Bank, 1999. Available at: http://www1.worldbank.org/tobacco/book/pdf/tobacco.pdf
7. Department of Health. *Saving lives: Our Healthier Nation*. London: The Stationery Office, 1999.
8. Department of Health. *Smoking kills – a White Paper on tobacco*. London: The Stationery Office, 1998.
9. Department of Health. *Health of the Nation - A Strategy for Health in England.* London: Her Majesty's Stationery Office, 1992.

Updated: March 2011

Survival following diagnosis of lung cancer

Purpose:

To provide comparative measures of the outcome of cancer treatment by area of residence, using geographical variations in cancer survival. Cancer survival is a key operational measure of the success of cancer treatment services. The principle of equity of access to optimal standards of National Health Service (NHS) cancer treatment was explicitly endorsed in the Calman-Hine report of 1995, which noted: "*All patients should have access to a uniformly high quality of care in the community or hospital wherever they may live to ensure the maximum possible cure rates and best quality of life*"[1]. A further policy document stated that from April 1999, patients with suspected breast cancer "*will be able to see a specialist within two weeks of their GP deciding they need to be seen urgently, and requesting an appointment*"[2]. Similar commitments have come into force for other cancers since April 2000. These policies are expected to lead to earlier diagnosis for all patients and more equitable access to treatment. The NHS Cancer Plan extended these commitments to improve cancer survival in England to amongst the best in Europe[3]. Cancer survival rates are outcome measures that can form part of the baseline for monitoring the future impact of these policies. Geographic differences in cancer survival are expected to decline over time if policy goals are achieved.

Definition of indicator and its variants:

Relative survival rate at one and five years after diagnosis for patients diagnosed in England during 2001-03 and followed up to the end of the year 2008. Cancer patients have higher mortality than the general population, but they do not all die of cancer. The relative survival rate is the ratio of the survival rate actually observed among the cancer patients and the survival rate that would have been expected if they had only had the same overall mortality rates as the general population. Thus if 5-year survival is 60% among a group of cancer patients of whom 90% would have been expected to survive that long, the relative survival is 67% (60/90). By convention, relative survival is described as a rate, although strictly it is a ratio of two percentages.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number and one-year relative survival rate (%)	MFP	15-99	E, GOR, SHA, CN	2001-03		14C_409PCP1_03_V1
Number and five-year relative survival rate (%)	MFP	15-99	E, GOR, SHA, CN	2001-03		14C_409PCP2_03_V1

Numerator:

Numerator data - Observed survival rate, derived from the distribution of survival times from the date of diagnosis (of a primary, invasive, malignant neoplasm) to the earliest date among the date of death, the date of emigration, and the cut-off date of follow-up (31 December 2008), for cancer patients who were diagnosed during 2001-03 and resident in England at the time of diagnosis. Analyses published prior to the July 2009 Compendium release include only first primary malignancies. From the July 2009 release onwards, higher order primary malignancies are also retained. The geographical area of each patient is defined by residence at the time of diagnosis. Records with faulty data, and those of patients diagnosed with in situ tumours, tumours uncertain as to whether benign or malignant, metastatic, or uncertain whether primary or metastatic, are excluded from analysis.

Source of numerator data - National Cancer Intelligence Centre (NCIC), Office for National Statistics (ONS) derived from NHS regional cancer registries; National Health Service Central Register.

Comments on numerator data -

Denominator:

Denominator data - The expected survival rate among the cancer patients, derived from life tables specific for the calendar year of death, single year of age, sex, Government Office Region of residence and deprivation.

Source of denominator data - Office for National Statistics (ONS).

Statistical methods:

The cumulative probability of death at a given time since diagnosis, relative to the corresponding probability in the general population, is estimated by comparing the death rates among the cancer patients in successive intervals of time since diagnosis with the all-causes death rate in the general population for the same sex and age group[4]. This is derived from life tables for the Government Office Region in which the patient lives. Life tables were created that were specific for calendar year of death, single year of age, sex, Government Office Region and deprivation. Life tables were constructed for the years 1991, 2001 and 2005 using ONS mid-year population estimates and the mean annual number of deaths in the three years centred on those index years. Life tables for

the intervening years were then created by linear interpolation. The life tables for 2005 were used for years 2006 to 2008 without interpolation.

The relative survival rates for the pooled three-year time period have been directly age-standardised to take into account any variation in relative survival by age. The standard population used is the number of persons who were diagnosed with the particular cancer under consideration in England and Wales during the period 1986-90. These were broken down into three age (at diagnosis) groups: 15-69, 70-79, and 80-99 years.

Male, female, and person relative survival rates are age-standardised using the same person standard population and may therefore be compared against each other. Rates for different cancers, however, are standardised using different standard populations, and in some instances different age groupings, and should therefore not be compared.

Annex 3 of the *Compendium User Guide*: Explanations of statistical methods used in the *Compendium*.

Interpretation of indicators:

Type of Indicator - The relative survival rate can be interpreted as an estimate of the proportion of cancer patients who die of their disease, after adjustment for death from other causes. A relative survival rate of 100% for a given period would imply that the cancer patients had had the same survival (or death) rates as the general population, *not* that they had all survived. Similarly, if the relative survival rate remains constant at (say) ten or more years after diagnosis, this implies that the ten-year survivors no longer have higher mortality than the general population.

Quality of indicator - Annex 12 of the *Compendium User Guide* describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Potential value of indicator:

Cancer survival is a broad indicator - differences may be due to a range of factors, of which the quality of treatment is only one. Differences in cancer survival between geographical areas should therefore be the origin of further enquiry, not the basis for simplistic conclusions about the efficacy of cancer treatment. The geographical area of residence at cancer diagnosis is a proxy for several aspects of health care, including the quality of primary care, the speed of referral and the quality of treatment services. It may also be a proxy for other factors, not readily measured, such as the degree of understanding of cancer symptoms and what to do about them among the local population, variations in the extent of disease at diagnosis (stage) and in the histology and grade of tumours, and artefacts in the data. If geographical survival differences can be attributed to differences in knowledge of cancer or the extent of disease at diagnosis, public health responses could be organised. Differences in cancer survival between geographical areas may also "*turn out to be due to the persistence of outmoded practices, or other remediable deficiencies in service provision or therapeutic regimes, and correcting these should lead to an improvement in overall standards of care*"[5].

Further reading:

A comprehensive monograph on cancer survival in England and Wales has been published[6], covering 2.9 million patients diagnosed with one of 47 adult cancers and 11 childhood cancers during 1971-90, and followed up to the end of 1995. It includes comprehensive analyses by age, sex, and NHS Region, and by socio-economic status (in five categories from affluent to deprived). Updated results for England and Wales have been published in 2004 and 2008 with a chapter for each of the 21 most common cancers. [7, 8] More limited analyses have also been published for cancer patients diagnosed during 1991-93 and followed up to 1998, and diagnosed during 1993-95 and followed up to 2000. [9, 10] Five-year age-standardised relative survival rates for 21 major cancers based on diagnoses in five year periods between 1998 and 2007 are available on the National Statistics website. [11] An early assessment of the impact of the NHS National Cancer Plan on relative survival has been published.[12] An all-cancer relative survival index for patients diagnosed 1991-2006 has been presented by PCT in England.[13] Cancer survival by Cancer Network has been presented for patients diagnosed with one of six cancers 1991-2006.[13]

1. Expert Advisory Group on Cancer. *A policy framework for commissioning cancer services.* London: Department of Health, 1995.
2. NHS Executive. *The new NHS. Modern. Dependable.* London: Department of Health, 1997.
3. Department of Health. *The NHS Cancer Plan: three-year progress report - maintaining the momentum.* London: Department of Health, 2003.
4. Estève J, Benhamou E, Croasdale M, Raymond L. Relative survival and the estimation of net survival: elements for further discussion. *Stat Med* 1990; 9: 529-38.
5. Clinical Outcomes Working Group. *Clinical outcome indicators, July 1996.* Edinburgh: The Scottish Office, 1996.
6. Coleman M.P, Babb P, Damiecki P, Grosclaude P, Honjo S, Jones J et al. *Cancer survival trends in England and Wales 1971-1995: deprivation and NHS Region.* Series SMPS No.61. London: The Stationery Office, 1999, 1-695.

7. Coleman M.P, Rachet B, Woods L.M, Mitry E, Riga M, Cooper N et al. Trends and socioeconomic inequalities in cancer survival in England and Wales up to 2001. British Journal of Cancer 2004; 90:1367-1373.

8. Rachet B, Quinn M.J, Cooper N, Coleman M.P. Survival from cancer of the lung in England & Wales up to 2001. *British Journal of Cancer* 2008; 99:S40-S42.

9. Coleman M.P, Babb P, Harris S, Quinn M.J, Sloggett A, De Stavola B.L. Cancer survival in England and Wales, 1991-1998. *Office for National Statistics Health Statistics Quarterly* 2000; 6: 71-80.

10. Office for National Statistics. Cancer survival in the health authorities of England,1993-2000. Report. *Office for National Statistics Health Statistics Quarterly* 2002;13: 95-103.

11. Office for National Statistics. *Survival Rates in England and Wales, 1998-2001, 1999-2002, 1999-03; Survival Rates in England 2000-04, 2001-06.* National Statistics website. Available at: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=14007&Pos=3&ColRank=1&Rank=422 , accessed 16 September 2010.

12. Rachet B, Maringe C, Nur U, Quaresma M, Shah A, Woods LM, et al. Population-based cancer survival trends in England and Wales up to 2007: an assessment of the NHS cancer plan for England. *Lancet Oncol* 2009;10:351-69.

13. Office for National Statistics. *Cancer survival by cancer network, patients diagnosed 1991-2006, followed up to 2007*. National Statistics website. Available at: http://www.statistics.gov.uk/STATBASE/Product.asp?vlnk=15387. Accessed 15 September 2010.

Updated: October 2010

Deaths at home from lung cancer

Purpose:

To improve palliative care and service planning for cancer patients in the terminal stages of life, allowing more of them the choice of dying at home.

Definition of indicator and its variants:

The proportion of deaths from lung cancer (ICD-10 C33-C34) that occur at home.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Percent of deaths at home	MFP	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		14D_194PC_09_V1
Indirectly age-standardised deaths at home rate per 100 deaths and number of deaths at home	MFP	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		14D_194ISR_09_V1

Numerator:

Numerator data - Deaths at home from lung cancer, classified by underlying cause of death (ICD-10 C33-C34), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

Information about the place of death is found on the mortality record in the communal establishment field. It contains one of:

- a 5 digit code identifying a communal establishment or institution (e.g. hospital, nursing home, residential home);
- an "H" code which indicates that the person is certified as having died at their home address and that this is not a communal establishment or;
- an "E" code which indicates that the person died elsewhere.

The communal establishments are themselves classified into 84 categories (e.g. general hospital, mental nursing home, nursing home etc) and can be further distinguished by whether they are an NHS or Non-NHS establishment.

It is currently ONS practice to include nursing homes with hospitals under a broader group - "Other hospitals and communal establishments for the care of the sick" - and also to include residential homes under "Other communal establishments". This is because of concerns highlighted by the ONS regarding the accuracy of the recorded status of some communal establishments, particularly nursing homes and residential homes.

It is therefore not possible to include nursing home or residential home deaths as a "home" death. For this indicator, a "home" death is defined as one that has the "H" code in the communal establishment field, i.e. where the death has occurred at the home address and that address is not of a communal establishment.

Denominator:

Denominator data - All deaths from lung cancer, classified by underlying cause of death (ICD-10 C33-C34), registered in the respective calendar year(s).

Source of denominator data - ONS.

Comments on denominator data - Includes deaths in all categories of communal establishment code, i.e. deaths in all communal establishments, at home, and elsewhere.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*. See Annex 2 for more details.

Statistical methods:

The age-standardised deaths at home rate utilises the indirect method of standardisation. The direct method was found not to be robust as it was affected by small numerator and denominator counts in specific age groups.

Indirect standardisation requires the computation of the ratio of an area's observed number of events to its expected number of events if it had experienced the standard age-specific rates. This age-standardised ratio can be converted into a rate by multiplying it by the crude rate of the standard population.

The standard rates used are those of England for the respective calendar year(s). Male and female rates have been standardised separately. The rate for persons is standardised for both age and sex.

This methodology is similar to that used for the Clinical Indicators and is described in detail in:

Annex 3: Explanations of statistical methods used in the *Compendium* (under the sections entitled "Indirectly Standardised Rates For Clinical Indicators" and "Confidence Intervals Of Indirectly Standardised Rates For Clinical Indicators").

Interpretation of indicators:

Type of Indicator - This is a condition-specific cross-sectional comparative indicator reflecting events which act as a proxy for outcome (quality of dying). In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable areas.

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - 95%. Some of the values and factors influencing them may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of deaths may be small at individual organisational level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% probability, will contain the underlying value of the indicator. If the confidence interval for an organisation's rate is outside the range of the national confidence intervals, the difference between the two rates is considered statistically significant. If the confidence intervals for two rates overlap, in most cases the difference between the rates would not be considered statistically significant.

Effect of Case-Mix / severity - Severity of the cancer and need for hospital care have implications for those who wish to die at home being able to do so. The data available do not allow adjustment for these factors.

Other Potential Confounding Factors - A number of factors outside the control of the NHS such as personal choice, availability of hospices, and family/community support may contribute to the variation shown by the indicator.

Relevant National initiatives:

1. Department of Health. *End of life care strategy : Promoting high quality care for all adults at the end of life*. London: Department of Health , 2008.
   http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_086277
2. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service*. London: Department of Health, 2004.
3. Department of Health. *Pioneering Schemes Named Best of the Best. NHS Beacons – Part of a Concerted Campaign to Improve Cancer Services.* Department of Health, 1999. Press release: reference 1999/0375
4. Commission for Health Improvement. *NHS Cancer Care in England and Wales. National Service Framework Assessments No.1*. London: Commission for Health Improvement, 2001.

Further reading:

1. Higginson I.J, Thompson M. Children and young people who die from cancer: epidemiology and place of death in England (1995-9). *British Medical Journal* 2003; 327: 478-479.
2. Grande GE, Todd CJ, Barclay SIG, Farquhar MC. Does hospital at home for palliative care facilitate death at home? Randomised controlled trial. *British Medical Journal* 1999; 319: 1472-1475.
3. Higginson I.J, Jarman B, Astin P, Dolan S. Do social factors affect where patients die: an analysis of 10 years of cancer deaths in England. *Journal of Public Health Medicine* 1999; 21(1): 23-28.

Updated: March 2011

Years of life lost due to mortality from lung cancer

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from lung cancer (ICD-10 A00-Y99).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		14E_050CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		14E_050DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from lung cancer classified by underlying cause of death (ICD-10 A00-Y99), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. World Health Organization. *WHO Tobacco Free Initiative*. Available at: http://www.who.int/tobacco/en/
2. World Health Organization. *WHO Framework Convention on Tobacco Control.* Geneva: World Health Organization, 2003. Available at http://www.who.int/tobacco/fctc/text/en/fctc_en.pdf
3. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service.* London: Department of Health, 2004.
4. NHS Executive. *Manual of Cancer Services Standards*. London: NHS Executive, 2000.
5. Department of Health. *NHS Cancer Plan*. London: Department of Health, 2000.
6. World Bank. *Economics of Tobacco Control*. Wasthington: World Bank, 1999. Available at: http://www1.worldbank.org/tobacco/book/pdf/tobacco.pdf
7. Department of Health. *Saving lives: Our Healthier Nation.* London: The Stationery Office, 1999.
8. Department of Health. *Smoking kills – a White Paper on tobacco*. London: The Stationery Office, 1998.
9. Department of Health. *Health of the Nation - A Strategy for Health in England.* London: Her Majesty's Stationery Office, 1992.

Updated: March 2011

Incidence of oesophageal cancer

Purpose:

To reduce the incidence of oesophageal cancer.

Definition of indicator and its variants:

Registrations for oesophageal cancer (ICD-10 C15 equivalent to ICD-9 150).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Indirectly age-standardised registration ratio (SRR) and number of registrations	MFP	All ages <75	E&W, E, GOR, ONS area, SHA, LA, PCO	2006-08		37A_188SR00++_08_V1 37A_188SR0074_08_V1
		All ages			1993-08	37A_188SRT00++_08_V1
Directly age-standardised registration rate and number of registrations	MFP	All ages <75	E&W, E, GOR, ONS area, SHA, LA, PCO	2006-08		37A_188DR00++_08_V1 37A_188DR0074_08_V1
		All ages			1993-08	37A_188DRT00++_08_V1

Numerator:

Numerator data - Cancer registrations for oesophageal cancer (ICD-10 C15, ICD-9 150) in the respective calendar years.

Source of numerator data - Regional Cancer Registries and Office for National Statistics (ONS).

Comments on numerator data - Registration data for years 1993-2005 were extracted by ONS in November 2008. Data for 2006 are as registered by the end of September 2008. The data extracts for 2007 and 2008 are the same as used for the respective ONS Annual Reference Volume (series MB1). For all years 1993 to 2006 organisational codes were assigned using the postcode of usual residence and the August 2008 edition of the National Statistics Postcode Directory. Years 2007 and 2008 used the May 2010 and November 2010 editions respectively. Results in the current *Compendium* may differ from those of previous issues because of changes in methodology to extract data by area, and also because of data enhancements by ONS. Cancer registrations are also continuously being updated retrospectively and ONS records may have been updated since previous analyses.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 3: Explanations of statistical methods used in the *Compendium*.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service.* London: Department of Health, 2004.
2. Kuper H, Boffetta P, Adami H-O. Tobacco use and cancer causation: association by tumour type. *J Intern Med* 2002; 252(3): 206-224.
3. ONS. *Cancer Statistics Registrations - Registrations of cancer diagnosed in 2008, England.* Series MB1 No 39. London: ONS, 2010. Available at: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=8843

Updated: June 2011

Mortality from oesophageal cancer

Purpose:

To reduce deaths from oesophageal cancer.

Definition of indicator and its variants:

Mortality from oesophageal cancer (ICD-10 C15 equivalent to ICD-9 150).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		37B_189NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		37B_189CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		37B_189SM00++_09_V1 37B_189SM0074_09_V1
		All ages			1993-09	37B_189SMT00++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		37B_189DR00++_09_V1 37B_189DR0074_09_V1
		All ages			1993-09	37B_189DRT00++_09_V1

Numerator:

Numerator data - Deaths from oesophageal cancer, classified by underlying cause of death (ICD-10 C15, ICD-9 150 adjusted), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males   All Ages: 1.01
Females   All Ages: 1

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service*. London: Department of Health, 2004.
2. Brock A, Griffiths C. Trends in the mortality of young adults aged 15-44 in England and Wales, 1961-2001. *Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 22-31. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf
3. World Health Organization. *WHO Framework on Tobacco Control*. Geneva: World Health Organization, 2003. Available at: http://www.who.int/tobacco/fctc/text/en/fctc_en.pdf
4. Department of Health. *NHS Cancer Plan*. London: Department of Health, 2000.
5. NHS Executive. *Manual of Cancer Services Standards*. London: NHS Executive, 2000.
6. Department of Health. *Saving lives: Our Healthier Nation.* London: The Stationery Office, 1999.
7. Department of Health. *Smoking kills – a White Paper on tobacco*. London: The Stationery Office, 1998.
8. Department of Health. *The Health of the Nation: A Policy Assessed*. London: The Stationery Office, 1998.

Updated: March 2011

Survival following diagnosis of oesophageal cancer

Purpose:

To provide comparative measures of the outcome of cancer treatment by area of residence, using geographical variations in cancer survival. Cancer survival is a key operational measure of the success of cancer treatment services. The principle of equity of access to optimal standards of National Health Service (NHS) cancer treatment was explicitly endorsed in the Calman-Hine report of 1995, which noted: "*All patients should have access to a uniformly high quality of care in the community or hospital wherever they may live to ensure the maximum possible cure rates and best quality of life*"[1]. A further policy document stated that from April 1999, patients with suspected breast cancer "*will be able to see a specialist within two weeks of their GP deciding they need to be seen urgently, and requesting an appointment*"[2]. Similar commitments have come into force for other cancers since April 2000. These policies are expected to lead to earlier diagnosis for all patients and more equitable access to treatment. The NHS Cancer Plan extended these commitments to improve cancer survival in England to amongst the best in Europe[3]. Cancer survival rates are outcome measures that can form part of the baseline for monitoring the future impact of these policies. Geographic differences in cancer survival are expected to decline over time if policy goals are achieved.

Definition of indicator and its variants:

Relative survival rate at one and five years after diagnosis for patients diagnosed in England during 2001-03 and followed up to the end of the year 2008. Cancer patients have higher mortality than the general population, but they do not all die of cancer. The relative survival rate is the ratio of the survival rate actually observed among the cancer patients and the survival rate that would have been expected if they had only had the same overall mortality rates as the general population. Thus, if five-year survival is 60% among a group of cancer patients of whom 90% would have been expected to survive that long, the relative survival is 67% (60/90). By convention, relative survival is described as a rate, although strictly it is a ratio of two percentages.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number and one-year relative survival rate (%)	MFP	15-99	E, GOR, SHA, CN	2001-03		37C_404PCP1_03_V1
Number and five-year relative survival rate (%)	MFP	15-99	E, GOR, SHA, CN	2001-03		37C_404PCP2_03_V1

Numerator:

Numerator data - Observed survival rate, derived from the distribution of survival times from the date of diagnosis (of a primary, invasive, malignant neoplasm) to the earliest date among the date of death, the date of emigration, and the cut-off date of follow-up (31 December 2008), for cancer patients who were diagnosed during 2001-03 and resident in England at the time of diagnosis. Analyses published prior to the July 2009 Compendium release include only first primary malignancies. From the July 2009 release onwards, higher order primary malignancies are also retained. The geographical area of each patient is defined by residence at the time of diagnosis. Records with faulty data, and those of patients diagnosed with in situ tumours, tumours uncertain as to whether benign or malignant, metastatic, or uncertain whether primary or metastatic, are excluded from analysis.

Source of numerator data - National Cancer Intelligence Centre (NCIC), Office for National Statistics (ONS) derived from NHS regional cancer registries; National Health Service Central Register.

Comments on numerator data -

Denominator:

Denominator data - The expected survival rate among the cancer patients, derived from life tables specific for the calendar year of death, single year of age, sex, Government Office Region of residence and deprivation.

Source of denominator data - Office for National Statistics (ONS).

Statistical methods:

The cumulative probability of death at a given time since diagnosis, relative to the corresponding probability in the general population, is estimated by comparing the death rates among the cancer patients in successive intervals of time since diagnosis with the all-causes death rate in the general population for the same sex and age group[4]. This is derived from life tables for the Government Office Region in which the patient lives. Life tables were created that were specific for calendar year of death, single year of age, sex, Government Office Region and deprivation. Life tables were constructed for the years 1991, 2001 and 2005 using ONS mid-year population estimates and the mean annual number of deaths in the three years centred on those index years. Life tables for

the intervening years were then created by linear interpolation. The life tables for 2005 were used for years 2006 to 2008 without interpolation.

The relative survival rates for the pooled three-year time period have been directly age-standardised to take into account any variation in relative survival by age. The standard population used is the number of persons who were diagnosed with the particular cancer under consideration in England and Wales during the period 1986-90. These were broken down into three age (at diagnosis) groups: 15-69, 70-79, and 80-99 years.

Male, female, and person relative survival rates are age-standardised using the same person standard population and may therefore be compared against each other. Rates for different cancers, however, are standardised using different standard populations, and in some instances different age groupings, and should therefore not be compared.

Annex 3 of the *Compendium User Guide*: Explanations of statistical methods used in the *Compendium*.

Interpretation of indicators:

Type of Indicator - The relative survival rate can be interpreted as an estimate of the proportion of cancer patients who die of their disease, after adjustment for death from other causes. A relative survival rate of 100% for a given period would imply that the cancer patients had had the same survival (or death) rates as the general population, not that they had all survived. Similarly, if the relative survival rate remains constant at (say) ten or more years after diagnosis, this implies that the ten-year survivors no longer have higher mortality than the general population.

Quality of indicator - Annex 12 of the *Compendium User Guide* describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Potential value of indicator:

Cancer survival is a broad indicator - differences may be due to a range of factors, of which the quality of treatment is only one. Differences in cancer survival between geographical areas should therefore be the origin of further enquiry, not the basis for simplistic conclusions about the efficacy of cancer treatment. The geographical area of residence at cancer diagnosis is a proxy for several aspects of health care, including the quality of primary care, the speed of referral and the quality of treatment services. It may also be a proxy for other factors, not readily measured, such as the degree of understanding of cancer symptoms and what to do about them among the local population, variations in the extent of disease at diagnosis (stage) and in the histology and grade of tumours, and artefacts in the data. If geographical survival differences can be attributed to differences in knowledge of cancer or the extent of disease at diagnosis, public health responses could be organised. Differences in cancer survival between geographical areas may also "turn out to be due to the persistence of outmoded practices, or other remediable deficiencies in service provision or therapeutic regimes, and correcting these should lead to an improvement in overall standards of care"[5.]

Further reading:

A comprehensive monograph on cancer survival in England and Wales has been published[6], covering 2.9 million patients diagnosed with one of 47 adult cancers and 11 childhood cancers during 1971-90, and followed up to the end of 1995. It includes comprehensive analyses by age, sex, and NHS Region, and by socio-economic status (in five categories from affluent to deprived). Updated results for England and Wales have been published in 2004 and 2008 with a chapter for each of the 21 most common cancers. [7, 8] More limited analyses have also been published for cancer patients diagnosed during 1991-93 and followed up to 1998, and diagnosed during 1993-95 and followed up to 2000. [9, 10] Five-year age-standardised relative survival rates for 21 major cancers based on diagnoses in five year periods between 1998 and 2007 are available on the National Statistics website.[11] An early assessment of the impact of the NHS National Cancer Plan on relative survival has been published.[12] An all-cancer relative survival index for patients diagnosed 1991-2006 has been presented by PCT in England.[13] Cancer survival by Cancer Network has been presented for patients diagnosed with one of six cancers 1991-2006.[13]

1. Expert Advisory Group on Cancer. *A policy framework for commissioning cancer services.* London: Department of Health, 1995.
2. NHS Executive. *The new NHS. Modern. Dependable.* London: Department of Health, 1997.
3. Department of Health. *The NHS Cancer Plan: three-year progress report - maintaining the momentum.* London: Department of Health, 2003.
4. Estève J, Benhamou E, Croasdale M, Raymond L. Relative survival and the estimation of net survival: elements for further discussion. *Stat Med* 1990; 9: 529-38.
5. Clinical Outcomes Working Group. *Clinical outcome indicators, July 1996.* Edinburgh: The Scottish Office, 1996.
6. Coleman M.P, Babb P, Damiecki P, Grosclaude P, Honjo S, Jones J et al. *Cancer survival trends in England and Wales 1971-1995: deprivation and NHS Region.* Series SMPS No.61. London: The Stationery Office, 1999, 1-695.

7. Coleman M.P, Rachet B, Woods L.M, Mitry E, Riga M, Cooper N et al. Trends and socioeconomic inequalities in cancer survival in England and Wales up to 2001. *British Journal of Cancer* 2004; 90:1367-1373.

8. Mitry E, Rachet B, Quinn M.J, Cooper N, Coleman M.P. Survival from cancer of the oesophagus in England & Wales up to 2001. *British Journal of Cancer* 2008; 99:S11-S13.

9. Coleman M.P, Babb P, Harris S, Quinn M.J, Sloggett A, De Stavola B.L. Cancer survival in England and Wales, 1991-1998. *Office for National Statistics Health Statistics Quarterly* 2000; 6: 71-80.

10. Office for National Statistics. Cancer survival in the health authorities of England,1993-2000. Report. *Office for National Statistics Health Statistics Quarterly* 2002;13: 95-103.

11. Office for National Statistics. *Survival Rates in England and Wales, 1998-2001, 1999-2002, 1999-03; Survival Rates in England 2000-04, 2001-06*. National Statistics website. Available at: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=14007&Pos=3&ColRank=1&Rank=422 , accessed 16 September 2010.

12. Rachet B, Maringe C, Nur U, Quaresma M, Shah A, Woods LM, et al. Population-based cancer survival trends in England and Wales up to 2007: an assessment of the NHS cancer plan for England. *Lancet Oncol* 2009;10:351-69.

13. Office for National Statistics. *Cancer survival by cancer network, patients diagnosed 1991-2006, followed up to 2007*. National Statistics website. Available at: http://www.statistics.gov.uk/STATBASE/Product.asp?vlnk=15387. Accessed 15 September 2010.

Updated: October 2010

Deaths at home from oesophageal cancer

Purpose:

To improve palliative care and service planning for cancer patients in the terminal stages of life, allowing more of them the choice of dying at home.

Definition of indicator and its variants:

The proportion of deaths from oesophageal cancer (ICD-10 C15) that occur at home.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Percent of deaths at home	MFP	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		37D_199PC_09_V1
Indirectly age-standardised deaths at home rate per 100 deaths and number of deaths at home	MFP	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		37D_199ISR_09_V1

Numerator:

Numerator data - Deaths at home from oesophageal cancer, classified by underlying cause of death (ICD-10 C15), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

Information about the place of death is found on the mortality record in the communal establishment field. It contains one of:

- A 5 digit code identifying a communal establishment or institution (e.g. hospital, nursing home, residential home);
- An "H" code which indicates that the person is certified as having died at their home address and that this is not a communal establishment or;
- An "E" code which indicates that the person died elsewhere.

The communal establishments are themselves classified into 84 categories (e.g. general hospital, mental nursing home, nursing home etc) and can be further distinguished by whether they are an NHS or Non-NHS establishment.

It is currently ONS practice to include nursing homes with hospitals under a broader group - "Other hospitals and communal establishments for the care of the sick" - and also to include residential homes under "Other communal establishments". This is because of concerns highlighted by ONS regarding the accuracy of the recorded status of some communal establishments, particularly nursing homes and residential homes.

It is therefore not possible to include nursing home or residential home deaths as a "home" death. For this indicator, a "home" death is defined as one that has the "H" code in the communal establishment field, i.e. where the death has occurred at the home address and that address is not of a communal establishment.

Denominator:

Denominator data - All deaths from oesophageal cancer, classified by underlying cause of death (ICD-10 C15), registered in the respective calendar year(s).

Source of denominator data - ONS.

Comments on denominator data - Includes deaths in all categories of communal establishment code, i.e. deaths in all communal establishments, at home, and elsewhere.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*. See Annex 2 for more details.

Statistical methods:

The age-standardised deaths at home rate utilises the indirect method of standardisation. The direct method was found not to be robust as it was affected by small numerator and denominator counts in specific age groups.

Indirect standardisation requires the computation of the ratio of an area's observed number of events to its expected number of events if it had experienced the standard age-specific rates. This age-standardised ratio can be converted into a rate by multiplying it by the crude rate of the standard population.

The standard rates used are those of England for the respective calendar year(s). Male and female rates have been standardised separately. The rate for persons is standardised for both age and sex.

This methodology is similar to that used for the Clinical Indicators and is described in detail in:

Annex 3: Explanations of statistical methods used in the *Compendium* (under the sections entitled "Indirectly Standardised Rates For Clinical Indicators" and "Confidence Intervals Of Indirectly Standardised Rates For Clinical Indicators").

Interpretation of indicators:

Type of Indicator - This is a condition-specific cross-sectional comparative indicator reflecting events which act as a proxy for outcome (quality of dying). In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable areas.

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - 95%. Some of the values and factors influencing them may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of deaths may be small at individual organisational level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% probability, will contain the underlying value of the indicator. If the confidence interval for an organisation's rate is outside the range of the national confidence intervals, the difference between the two rates is considered statistically significant. If the confidence intervals for two rates overlap, in most cases the difference between the rates would not be considered statistically significant.

Effect of Case-Mix / severity - Severity of the cancer and need for hospital care have implications for those who wish to die at home being able to do so. The data available do not allow adjustment for these factors.

Other Potential Confounding Factors - A number of factors outside the control of the NHS such as personal choice, availability of hospices, and family/community support may contribute to the variation shown by the indicator.

Relevant National initiatives:

1. Department of Health. *End of life care strategy : Promoting high quality care for all adults at the end of life*. London: Department of Health , 2008.
   http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_086277
2. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service*. London: Department of Health, 2004.
3. Department of Health. *Pioneering Schemes Named Best of the Best. NHS Beacons – Part of a Concerted Campaign to Improve Cancer Services.* Department of Health, 1999. Press release: reference 1999/0375
4. Commission for Health Improvement. *NHS Cancer Care in England and Wales. National Service Framework Assessments No.1*. London: Commission for Health Improvement, 2001.

Further reading:

1. Higginson I.J, Thompson M. Children and young people who die from cancer: epidemiology and place of death in England (1995-9). *British Medical Journal* 2003; 327: 478-479.
2. Grande GE, Todd CJ, Barclay SIG, Farquhar MC. Does hospital at home for palliative care facilitate death at home? Randomised controlled trial. *British Medical Journal* 1999; 319: 1472-1475.
3. Higginson I.J, Jarman B, Astin P, Dolan S. Do social factors affect where patients die: an analysis of 10 years of cancer deaths in England. *Journal of Public Health Medicine* 1999; 21(1): 23-28.

Updated: March 2011

Years of life lost due to mortality from oesophageal cancer

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from oesophageal cancer (ICD-10 C15).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		37E_052CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		37E_052DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from oesophageal cancer classified by underlying cause of death (ICD-10 C15), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service*. London: Department of Health, 2004.
2. Brock A, Griffiths C. Trends in the mortality of young adults aged 15-44 in England and Wales, 1961-2001. *Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 22-31. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf
3. World Health Organization. *WHO Framework on Tobacco Control*. Geneva: World Health Organization, 2003. Available at: http://www.who.int/tobacco/fctc/text/en/fctc_en.pdf
4. Department of Health. *NHS Cancer Plan*. London: Department of Health, 2000.
5. NHS Executive. *Manual of Cancer Services Standards*. London: NHS Executive, 2000.
6. Department of Health. *Saving lives: Our Healthier Nation.* London: The Stationery Office, 1999.
7. Department of Health. *Smoking kills – a White Paper on tobacco*. London: The Stationery Office, 1998.
8. Department of Health. *The Health of the Nation: A Policy Assessed*. London: The Stationery Office, 1998.

Updated: March 2011

Incidence of prostate cancer

Purpose:

To reduce the incidence of prostate cancer.

Definition of indicator and its variants:

Registrations for prostate cancer (ICD-10 C61 equvalent to ICD-9 185).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Indirectly age-standardised registration ratio (SRR) and number of registrations	M	All ages <75	E&W, E, GOR, ONS area, SHA, LA, PCO	2006-08		18A_147SR00++_08_V1 18A_147SR0074_08_V1
		All ages			1993-08	18A_147SRT00++_08_V1
Directly age-standardised registration rate and number of registrations	M	All ages <75	E&W, E, GOR, ONS area, SHA, LA, PCO	2006-08		18A_147DR00++_08_V1 18A_147DR0074_08_V1
		All ages			1993-08	18A_147DRT00++_08_V1

Numerator:

Numerator data - Cancer registrations for prostate cancer (ICD-10 C61, ICD-9 185) in the respective calendar years.

Source of numerator data - Regional Cancer Registries and Office for National Statistics (ONS).

Comments on numerator data - Registration data for years 1993-2005 were extracted by ONS in November 2008. Data for 2006 are as registered by the end of September 2008. The data extracts for 2007 and 2008 are the same as used for the respective ONS Annual Reference Volume (series MB1). For all years 1993 to 2006 organisational codes were assigned using the postcode of usual residence and the August 2008 edition of the National Statistics Postcode Directory. Years 2007 and 2008 used the May 2010 and November 2010 editions respectively. Results in the current *Compendium* may differ from those of previous issues because of changes in methodology to extract data by area, and also because of data enhancements by ONS. Cancer registrations are also continuously being updated retrospectively and ONS records may have been updated since previous analyses.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 3: Explanations of statistical methods used in the *Compendium*

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service*. London: Department of Health, 2004.
2. Watson E, Jenikins L, Bukach C, Austoker J. *Prostate Cancer Risk Management Programme Information Pack for Primary Care*. NHS Cancer Screening Programmes, 2002.
3. ONS. *Cancer Statistics Registrations - Registrations of cancer diagnosed in 2008, England.* Series MB1 No 39. London: ONS, 2010. Available at: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=8843

Updated: June 2011

Mortality from prostate cancer

Purpose:

To reduce deaths from prostate cancer.

Definition of indicator and its variants:

Mortality from prostate cancer (ICD-10 C61 equivalent to ICD-9 185).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	M	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		18B_148NO_09_V1
Average age-specific death rate per 100,000 resident population	M	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		18B_148CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	M	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		18B_148SM00++_09_V1 18B_148SM0074_09_V1
		All ages			1993-09	18B_148SMT00++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	M	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		18B_148DR00++_09_V1 18B_148DR0074_09_V1
		All ages			1993-09	18B_148DRT00++_09_V1

Numerator:

Numerator data - Deaths from prostate cancer, classified by underlying cause of death (ICD-10 C61, ICD-9 185 adjusted), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males   0-74yrs: 1.008   75-84yrs: 1.031   85+yrs: 1.09

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service*. London: Department of Health, 2004.
2. World Health Organization. *WHO Framework on Tobacco Control*. Geneva: World Health Organization, 2003. Available at http://www.who.int/tobacco/fctc/text/en/fctc_en.pdf
3. NHS Executive. *Manual of Cancer Services Standards*. London: NHS Executive, 2000.
4. Department of Health. *NHS Cancer Plan*. London: Department of Health, 2000.
5. Department of Health. *Saving lives: Our Healthier Nation*. London: The Stationery Office, 1999.
6. World Bank. *Economics of Tobacco Control*. Washington: World Bank, 1999. Available at: http://www1.worldbank.org/tobacco/book/pdf/tobacco.pdf
7. Department of Health. *Smoking kills – a White Paper on tobacco*. London: The Stationery Office, 1998.

Updated: March 2011

Survival following diagnosis of prostate cancer

Purpose:

To provide comparative measures of the outcome of cancer treatment by area of residence, using geographical variations in cancer survival. Cancer survival is a key operational measure of the success of cancer treatment services. The principle of equity of access to optimal standards of National Health Service (NHS) cancer treatment was explicitly endorsed in the Calman-Hine report of 1995, which noted: "*All patients should have access to a uniformly high quality of care in the community or hospital wherever they may live to ensure the maximum possible cure rates and best quality of life*"[1]. A further policy document stated that from April 1999, patients with suspected breast cancer "*will be able to see a specialist within two weeks of their GP deciding they need to be seen urgently, and requesting an appointment*"[2]. Similar commitments have come into force for other cancers since April 2000. These policies are expected to lead to earlier diagnosis for all patients and more equitable access to treatment. The NHS Cancer Plan extended these commitments to improve cancer survival in England to amongst the best in Europe[3]. Cancer survival rates are outcome measures that can form part of the baseline for monitoring the future impact of these policies. Geographic differences in cancer survival are expected to decline over time if policy goals are achieved.

Definition of indicator and its variants:

Relative survival rate at one and five years after diagnosis for patients diagnosed in England during 2001-03 and followed up to the end of the year 2008. Cancer patients have higher mortality than the general population, but they do not all die of cancer. The relative survival rate is the ratio of the survival rate actually observed among the cancer patients and the survival rate that would have been expected if they had only had the same overall mortality rates as the general population. Thus, if five-year survival is 60% among a group of cancer patients of whom 90% would have been expected to survive that long, the relative survival is 67% (60/90). By convention, relative survival is described as a rate, although strictly it is a ratio of two percentages.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number and one-year relative survival rate (%)	M	15-99	E, GOR, SHA, CN	2001-03		18C_411PCP1_03_V1
Number and five-year relative survival rate (%)	M	15-99	E, GOR, SHA, CN	2001-03		18C_411PCP2_03_V1

Numerator:

Numerator data - Observed survival rate, derived from the distribution of survival times from the date of diagnosis (of a primary, invasive, malignant neoplasm) to the earliest date among the date of death, the date of emigration, and the cut-off date of follow-up (31 December 2008), for cancer patients who were diagnosed during 2001-03 and resident in England at the time of diagnosis. Analyses published prior to the July 2009 Compendium release include only first primary malignancies. From the July 2009 release onwards, higher order primary malignancies are also retained. The geographical area of each patient is defined by residence at the time of diagnosis. Records with faulty data, and those of patients diagnosed with in situ tumours, tumours uncertain as to whether benign or malignant, metastatic, or uncertain whether primary or metastatic, are excluded from analysis.

Source of numerator data - National Cancer Intelligence Centre (NCIC), Office for National Statistics (ONS) derived from NHS regional cancer registries; National Health Service Central Register.

Comments on numerator data -

Denominator:

Denominator data - The expected survival rate among the cancer patients, derived from life tables specific for the calendar year of death, single year of age, sex, Government Office Region of residence and deprivation.

Source of denominator data - Office for National Statistics (ONS).

Statistical methods:

The cumulative probability of death at a given time since diagnosis, relative to the corresponding probability in the general population, is estimated by comparing the death rates among the cancer patients in successive intervals of time since diagnosis with the all-causes death rate in the general population for the same sex and age group[4]. This is derived from life tables for the Government Office Region in which the patient lives. Life tables were created that were specific for calendar year of death, single year of age, sex, Government Office Region and deprivation. Life tables were constructed for the years 1991, 2001 and 2005 using ONS mid-year population estimates and the mean annual number of deaths in the three years centred on those index years. Life tables for

the intervening years were then created by linear interpolation. The life tables for 2005 were used for years 2006 to 2008 without interpolation.

The relative survival rates for the pooled three-year time period have been directly age-standardised to take into account any variation in relative survival by age. The standard population used is the number of persons who were diagnosed with the particular cancer under consideration in England and Wales during the period 1986-90. These were broken down into three age (at diagnosis) groups: 15-69, 70-79, and 80-99 years.

Rates for different cancers are standardised using different standard populations, and in some instances different age groupings, and should therefore not be compared.

Annex 3 of the *Compendium User Guide*: Explanations of statistical methods used in the *Compendium*.

Interpretation of indicators:

Type of Indicator - The relative survival rate can be interpreted as an estimate of the proportion of cancer patients who die of their disease, after adjustment for death from other causes. A relative survival rate of 100% for a given period would imply that the cancer patients had had the same survival (or death) rates as the general population, not that they had all survived. Similarly, if the relative survival rate remains constant at (say) ten or more years after diagnosis, this implies that the ten-year survivors no longer have higher mortality than the general population.

Quality of indicator - Annex 12 of the *Compendium User Guide* describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Potential value of indicator:

Cancer survival is a broad indicator - differences may be due to a range of factors, of which the quality of treatment is only one. Differences in cancer survival between geographical areas should therefore be the origin of further enquiry, not the basis for simplistic conclusions about the efficacy of cancer treatment. The geographical area of residence at cancer diagnosis is a proxy for several aspects of health care, including the quality of primary care, the speed of referral and the quality of treatment services. It may also be a proxy for other factors, not readily measured, such as the degree of understanding of cancer symptoms and what to do about them among the local population, variations in the extent of disease at diagnosis (stage) and in the histology and grade of tumours, and artefacts in the data. If geographical survival differences can be attributed to differences in knowledge of cancer or the extent of disease at diagnosis, public health responses could be organised. Differences in cancer survival between geographical areas may also "turn out to be due to the persistence of outmoded practices, or other remediable deficiencies in service provision or therapeutic regimes, and correcting these should lead to an improvement in overall standards of care"[5].

Further reading:

A comprehensive monograph on cancer survival in England and Wales has been published[6], covering 2.9 million patients diagnosed with one of 47 adult cancers and 11 childhood cancers during 1971-90, and followed up to the end of 1995. It includes comprehensive analyses by age, sex, and NHS Region, and by socio-economic status (in five categories from affluent to deprived). Updated results for England and Wales have been published in 2004 and 2008 with a chapter for each of the 21 most common cancers.[7, 8] More limited analyses have also been published for cancer patients diagnosed during 1991-93 and followed up to 1998, and diagnosed during 1993-95 and followed up to 2000.[9, 10] Five-year age-standardised relative survival rates for 21 major cancers based on diagnoses in five year periods between 1998 and 2007 are available on the National Statistics website.[11] An early assessment of the impact of the NHS National Cancer Plan on relative survival has been published.[12] An all-cancer relative survival index for patients diagnosed 1991-2006 has been presented by PCT in England.[13] Cancer survival by Cancer Network has been presented for patients diagnosed with one of six cancers 1991-2006.[13]

1. Expert Advisory Group on Cancer. *A policy framework for commissioning cancer services.* London: Department of Health, 1995.
2. NHS Executive. *The new NHS. Modern. Dependable.* London: Department of Health, 1997.
3. Department of Health. *The NHS Cancer Plan: three-year progress report - maintaining the momentum.* London: Department of Health, 2003.
4. Estève J, Benhamou E, Croasdale M, Raymond L. Relative survival and the estimation of net survival: elements for further discussion. *Stat Med* 1990; 9: 529-38.
5. Clinical Outcomes Working Group. *Clinical outcome indicators, July 1996.* Edinburgh: The Scottish Office, 1996.
6. Coleman M.P, Babb P, Damiecki P, Grosclaude P, Honjo S, Jones J et al. *Cancer survival trends in England and Wales 1971-1995: deprivation and NHS Region.* Series SMPS No.61. London: The Stationery Office, 1999, 1-695.
7. Coleman M.P, Rachet B, Woods L.M, Mitry E, Riga M, Cooper N et al. Trends and socioeconomic inequalities in cancer survival in England and Wales up to 2001. British Journal of Cancer 2004; 90:1367-1373.

8. Rowan S, Rachet B, Alexe D.M, Cooper N, Coleman M.P. Survival from prostate cancer in England & Wales up to 2001. *British Journal of Cancer* 2008; 99:S75-S77.
9. Coleman M.P, Babb P, Harris S, Quinn M.J, Sloggett A, De Stavola B.L. Cancer survival in England and Wales, 1991-1998. *Office for National Statistics Health Statistics Quarterly* 2000; 6: 71-80.
10. Office for National Statistics. Cancer survival in the health authorities of England,1993-2000. Report. *Office for National Statistics Health Statistics Quarterly* 2002;13: 95-103.
11. Office for National Statistics. *Survival Rates in England and Wales, 1998-2001, 1999-2002, 1999-03; Survival Rates in England 2000-04, 2001-06*. National Statistics website. Available at: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=14007&Pos=3&ColRank=1&Rank=422 , accessed 16 September 2010.
12. Rachet B, Maringe C, Nur U, Quaresma M, Shah A, Woods LM, et al. Population-based cancer survival trends in England and Wales up to 2007: an assessment of the NHS cancer plan for England. *Lancet Oncol* 2009;10:351-69.
13. Office for National Statistics. *Cancer survival by cancer network, patients diagnosed 1991-2006, followed up to 2007*. National Statistics website. Available at: http://www.statistics.gov.uk/STATBASE/Product.asp?vlnk=15387. Accessed 15 September 2010.

Updated: October 2010

Deaths at home from prostate cancer

Purpose:

To improve palliative care and service planning for cancer patients in the terminal stages of life, allowing more of them the choice of dying at home.

Definition of indicator and its variants:

The proportion of deaths from prostate cancer (ICD-10 C61) that occur at home.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Percent of deaths at home	M	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		18D_197PC_09_V1
Indirectly age-standardised deaths at home rate per 100 deaths and number of deaths at home	M	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		18D_197ISR_09_V1

Numerator:

Numerator data - Deaths at home from prostate cancer, classified by underlying cause of death (ICD-10 C61), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

Information about the place of death is found on the mortality record in the communal establishment field. It contains one of:

- a 5 digit code identifying a communal establishment or institution (e.g. hospital, nursing home, residential home);
- an "H" code which indicates that the person is certified as having died at their home address and that this is not a communal establishment or;
- an "E" code which indicates that the person died elsewhere.

The communal establishments are themselves classified into 84 categories (e.g. general hospital, mental nursing home, nursing home etc) and can be further distinguished by whether they are an NHS or Non-NHS establishment.

It is currently ONS practice to include nursing homes with hospitals under a broader group - "Other hospitals and communal establishments for the care of the sick" - and also to include residential homes under "Other communal establishments". This is because of concerns highlighted by the ONS regarding the accuracy of the recorded status of some communal establishments, particularly nursing homes and residential homes.

It is therefore not possible to include nursing home or residential home deaths as a "home" death. For this indicator, a "home" death is defined as one that has the "H" code in the communal establishment field, i.e. where the death has occurred at the home address and that address is not a communal establishment.

Denominator:

Denominator data - All deaths from prostate cancer, classified by underlying cause of death (ICD-10 C61), registered in the respective calendar year(s).

Source of denominator data - ONS.

Comments on denominator data - Includes deaths in all categories of communal establishment code, i.e. deaths in all communal establishments, at home, and elsewhere.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*. See Annex 2 for more details.

Statistical methods:

The age-standardised deaths at home rate utilises the indirect method of standardisation. The direct method was found not to be robust as it was affected by small numerator and denominator counts in specific age groups.

Indirect standardisation requires the computation of the ratio of an area's observed number of events to its expected number of events if it had experienced the standard age-specific rates. This age-standardised ratio can be converted into a rate by multiplying it by the crude rate of the standard population.

The standard rates used are those of England for the respective calendar year(s). Male and female rates have been standardised separately. The rate for persons is standardised for both age and sex.

This methodology is similar to that used for the Clinical Indicators and is described in detail in:

Annex 3: Explanations of statistical methods used in the *Compendium* (under the sections entitled "Indirectly Standardised Rates For Clinical Indicators" and "Confidence Intervals Of Indirectly Standardised Rates For Clinical Indicators").

Interpretation of indicators:

Type of Indicator - This is a condition-specific cross-sectional comparative indicator reflecting events which act as a proxy for outcome (quality of dying). In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable areas.

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - 95%. Some of the values and factors influencing them may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of deaths may be small at individual organisational level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% probability, will contain the underlying value of the indicator. If the confidence interval for an organisation's rate is outside the range of the national confidence intervals, the difference between the two rates is considered statistically significant. If the confidence intervals for two rates overlap, in most cases the difference between the rates would not be considered statistically significant.

Effect of Case-Mix / severity - Severity of the cancer and need for hospital care have implications for those who wish to die at home being able to do so. The data available do not allow adjustment for these factors.

Other Potential Confounding Factors - A number of factors outside the control of the NHS such as personal choice, availability of hospices, and family/community support may contribute to the variation shown by the indicator.

Relevant National initiatives:

1. Department of Health. *End of life care strategy : Promoting high quality care for all adults at the end of life*. London: Department of Health , 2008.
   http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_086277
2. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service*. London: Department of Health, 2004.
3. Department of Health. *Pioneering Schemes Named Best of the Best. NHS Beacons – Part of a Concerted Campaign to Improve Cancer Services.* Department of Health, 1999. Press release: reference 1999/0375
4. Commission for Health Improvement. *NHS Cancer Care in England and Wales. National Service Framework Assessments No.1*. London: Commission for Health Improvement, 2001.

Further reading:

1. Higginson I.J, Thompson M. Children and young people who die from cancer: epidemiology and place of death in England (1995-9). *British Medical Journal* 2003; 327: 478-479.
2. Grande GE, Todd CJ, Barclay SIG, Farquhar MC. Does hospital at home for palliative care facilitate death at home? Randomised controlled trial. *British Medical Journal* 1999; 319: 1472-1475.
3. Higginson I.J, Jarman B, Astin P, Dolan S. Do social factors affect where patients die: an analysis of 10 years of cancer deaths in England. *Journal of Public Health Medicine* 1999; 21(1): 23-28.

Updated: March 2011

Years of life lost due to mortality from prostate cancer

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from prostate cancer (ICD-10 C61).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	M	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		18E_053CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	M	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		18E_053DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from prostate cancer classified by underlying cause of death (ICD-10 C61), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

    Annex 2: Changes to Office for National Statistics mortality data
    Annex 3: Explanations of statistical methods used in the *Compendium*
    Annex 5: European Standard Population

Interpretation of indicators:

    Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service*. London: Department of Health, 2004.
2. World Health Organization. *WHO Framework on Tobacco Control*. Geneva: World Health Organization, 2003. Available at http://www.who.int/tobacco/fctc/text/en/fctc_en.pdf
3. NHS Executive. *Manual of Cancer Services Standards*. London: NHS Executive, 2000.
4. Department of Health. *NHS Cancer Plan*. London: Department of Health, 2000.
5. Department of Health. *Saving lives: Our Healthier Nation*. London: The Stationery Office, 1999.
6. World Bank. *Economics of Tobacco Control*. Washington: World Bank, 1999. Available at: http://www1.worldbank.org/tobacco/book/pdf/tobacco.pdf
7. Department of Health. *Smoking kills – a White Paper on tobacco*. London: The Stationery Office, 1998.

Updated: March 2011

Incidence of malignant melanoma

Purpose:

To reduce the incidence of malignant melanoma.

Definition of indicator and its variants:

Registrations for malignant melanoma (ICD-10 C43 equivalent to ICD-9 172).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Indirectly age-standardised registration ratio (SRR) and number of registrations	MFP	All ages <75	E&W, E, GOR, ONS area, SHA, LA, PCO	2006-08		15A_150SR00++_08_V1 15A_150SR0074_08_V1
		All ages			1993-08	15A_150SRT00++_08_V1
Directly age-standardised registration rate and number of registrations	MFP	All ages <75	E&W, E, GOR, ONS area, SHA, LA, PCO	2006-08		15A_150DR00++_08_V1 15A_150DR0074_08_V1
		All ages			1993-08	15A_150DRT00++_08_V1

Numerator:

Numerator data - Cancer registrations for malignant melanoma (ICD-10 C43, ICD-9 172) in the respective calendar years.

Source of numerator data - Regional Cancer Registries and Office for National Statistics (ONS).

Comments on numerator data - Registration data for years 1993-2005 were extracted by ONS in November 2008. Data for 2006 are as registered by the end of September 2008. The data extracts for 2007 and 2008 are the same as used for the respective ONS Annual Reference Volume (series MB1). For all years 1993 to 2006 organisational codes were assigned using the postcode of usual residence and the August 2008 edition of the National Statistics Postcode Directory. Years 2007 and 2008 used the May 2010 and November 2010 editions respectively. Results in the current *Compendium* may differ from those of previous issues because of changes in methodology to extract data by area, and also because of data enhancements by ONS. Cancer registrations are also continuously being updated retrospectively and ONS records may have been updated since previous analyses.

The directly age-standardised registration rate for skin cancer for persons of all ages was a target indicator in the *Health of the Nation* strategy (See "Further reading").

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service.* London: Department of Health, 2004.
2. Department of Health. *The Health of the Nation: A Strategy for Health in England.* London: Her Majesty's Stationery Office, 1992.

3. ONS. *Cancer Statistics Registrations - Registrations of cancer diagnosed in 2008, England.* Series MB1 No 39. London: ONS, 2010. Available at: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=8843

Updated: June 2011

Incidence of skin cancers other than malignant melanoma

Purpose:

To reduce the incidence of skin cancers other than malignant melanoma.

Definition of indicator and its variants:

Registrations for skin cancers other than malignant melanoma (ICD-10 C44 equivalent to ICD-9 173).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Indirectly age-standardised registration ratio (SRR) and number of registrations	MFP	All ages <75	E&W, E, GOR, ONS area, SHA, LA, PCO	2006-08		15B_151SR00++_08_V1 15B_151SR0074_08_V1
		All ages			1993-08	15B_151SRT00++_08_V1
Directly age-standardised registration rate and number of registrations	MFP	All ages <75	E&W, E, GOR, ONS area, SHA, LA, PCO	2006-08		15B_151DR00++_08_V1 15B_151DR0074_08_V1
		All ages			1993-08	15B_151DRT00++_08_V1

Numerator:

Numerator data - Cancer registrations for skin cancers other than malignant melanoma (ICD-10 C44, ICD-9 173) in the respective calendar years.

Source of numerator data - Regional Cancer Registries and Office for National Statistics (ONS).

Comments on numerator data - Registration data for years 1993-2005 were extracted by ONS in November 2008. Data for 2006 are as registered by the end of September 2008. The data extracts for 2007 and 2008 are the same as used for the respective ONS Annual Reference Volume (series MB1). For all years 1993 to 2006 organisational codes were assigned using the postcode of usual residence and the August 2008 edition of the National Statistics Postcode Directory. Years 2007 and 2008 used the May 2010 and November 2010 editions respectively. Results in the current *Compendium* may differ from those of previous issues because of changes in methodology to extract data by area, and also because of data enhancements by ONS. Cancer registrations are also continuously being updated retrospectively and ONS records may have been updated since previous analyses.

Skin cancers other than malignant melanoma (ICD-10 C44, ICD-9 173) are believed to be greatly under reported. The registration of such cancers varies widely between the regional registries and depends on their ability to access out-patient records and general practioners.

The directly age-standardised registration rate for skin cancer for persons of all ages was a target indicator in the *Health of the Nation* strategy (See "Further reading").

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service.* London: Department of Health, 2004.
2. Department of Health. *The Health of the Nation: A Strategy for Health in England.* London: Her Majesty's Stationery Office, 1992.
3. ONS. *Cancer Statistics Registrations - Registrations of cancer diagnosed in 2008, England.* Series MB1 No 39. London: ONS, 2010. Available at: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=8843

Updated: June 2011

Incidence of all skin cancers

Purpose:

To reduce the incidence of skin cancer.

Definition of indicator and its variants:

Registrations for all skin cancers (ICD-10 C43-C44 equivalent to ICD-9 172-173).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Indirectly age-standardised registration ratio (SRR) and number of registrations	MFP	All ages <75	E&W, E, GOR, ONS area, SHA, LA, PCO	2006-08		15C_176SR00++_08_V1 15C_176SR0074_08_V1
		All ages			1993-08	15C_176SRT00++_08_V1
Directly age-standardised registration rate and number of registrations	MFP	All ages <75	E&W, E, GOR, ONS area, SHA, LA, PCO	2006-08		15C_176DR00++_08_V1 15C_176DR0074_08_V1
		All ages			1993-08	15C_176DRT00++_08_V1

Numerator:

Numerator data - Cancer registrations for all skin cancers (ICD-10 C43-C44, ICD-9 172-173) in the respective calendar years.

Source of numerator data - Regional Cancer Registries and Office for National Statistics (ONS).

Comments on numerator data - Registration data for years 1993-2005 were extracted by ONS in November 2008. Data for 2006 are as registered by the end of September 2008. The data extracts for 2007 and 2008 are the same as used for the respective ONS Annual Reference Volume (series MB1). For all years 1993 to 2006 organisational codes were assigned using the postcode of usual residence and the August 2008 edition of the National Statistics Postcode Directory. Years 2007 and 2008 used the May 2010 and November 2010 editions respectively. Results in the current *Compendium* may differ from those of previous issues because of changes in methodology to extract data by area, and also because of data enhancements by ONS. Cancer registrations are also continuously being updated retrospectively and ONS records may have been updated since previous analyses.

Skin cancers other than malignant melanoma (ICD-10 C44, ICD-9 173) are believed to be greatly under reported. The registration of such cancers varies widely between the regional registries and depends on their ability to access out-patient records and general practioners.

The directly age-standardised registration rate for skin cancer for persons of all ages was a target indicator in the *Health of the Nation* strategy (See "Further reading").

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *Health of the Nation - A Strategy for Health in England.* London: Her Majesty's Stationery Office, 1992.
2. ONS. *Cancer Statistics Registrations - Registrations of cancer diagnosed in 2008, England.* Series MB1 No 39. London: ONS, 2010. Available at: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=8843

Updated: June 2011

Mortality from malignant melanoma

Purpose:

To reduce deaths from malignant melanoma.

Definition of indicator and its variants:

Mortality from malignant melanoma (ICD-10 C43 equivalent to ICD-9 172).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		15D_152NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		15D_152CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		15D_152SM00++_09_V1 15D_152SM0074_09_V1
		All ages			1993-09	15D_152SMT00++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		15D_152DR00++_09_V1 15D_152DR0074_09_V1
		All ages			1993-09	15D_152DRT00++_09_V1

Numerator:

Numerator data - Deaths from malignant melanoma, classified by underlying cause of death (ICD-10 C43, ICD-9 172 adjusted), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males   All Ages: 0.966
Females   All Ages: 0.955

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service*. London: Department of Health, 2004.
2. Brock A, Griffiths C. Trends in the mortality of young adults aged 15-44 in England and Wales, 1961-2001. *Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 22-31. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf
3. World Health Organization. *WHO Framework on Tobacco Control.* Geneva: World Health Organization, 2003. Available at: http://www.who.int/tobacco/fctc/text/en/fctc_en.pdf
4. NHS Executive. *Manual of Cancer Services Standards*. London: NHS Executive, 2000.
5. Department of Health. *NHS Cancer Plan*. London: Department of Health, 2000.
6. Department of Health. *Saving lives: Our Healthier Nation*. London: The Stationery Office, 1999.
7. World Bank. *Economics of Tobacco Control*. Washington: World Bank, 1999. Available at: http://www1.worldbank.org/tobacco/book/pdf/tobacco.pdf
8. Department of Health. *Smoking kills – a White Paper on tobacco.* London: The Stationery Office, 1998.

Updated: March 2011

Mortality from skin cancers other than malignant melanoma

Purpose:

To reduce deaths from skin cancers other than malignant melanoma.

Definition of indicator and its variants:

Mortality from skin cancers other than malignant melanoma (ICD-10 C44 equivalent to ICD-9 173).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		15E_153NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		15E_153CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		15E_153SM00++_09_V1 15E_153SM0074_09_V1
		All ages			1993-09	15E_153SMT00++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		15E_153DR00++_09_V1 15E_153DR0074_09_V1
		All ages			1993-09	15E_153DRT00++_09_V1

Numerator:

Numerator data - Deaths from skin cancers other than malignant melanoma, classified by underlying cause of death (ICD-10 C44, ICD-9 173 adjusted), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS)

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males   All Ages: 1
Females   All Ages: 1.14

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service*. London: Department of Health, 2004.
2. NHS Executive. *Manual of Cancer Services Standards*. London: NHS Executive, 2000.
3. Department of Health. *NHS Cancer Plan*. London: Department of Health, 2000.
4. Department of Health. *Saving lives: Our Healthier Nation*. London: The Stationery Office, 1999.
5. World Bank. *Economics of Tobacco Control*. Washington: World Bank, 1999.
   http://www1.worldbank.org/tobacco/book/pdf/tobacco.pdf
6. Department of Health. *Smoking kills – a White Paper on tobacco*. London: The Stationery Office, 1998.
7. Brock A, Griffiths C. Trends in the mortality of young adults aged 15-44 in England and Wales, 1961-2001. *Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 22-31. Available at:
   http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf
8. World Health Organization. *WHO Framework on Tobacco Control*. Geneva: World Health Organization, 2005.

Updated: March 2011

Years of life lost due to mortality from malignant melanoma

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from malignant melanoma (ICD-10 A00-Y9 C43).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		15F_056CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		15F_056DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from malignant melanoma classified by underlying cause of death (ICD-10 C43), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service*. London: Department of Health, 2004.
2. Brock A, Griffiths C. Trends in the mortality of young adults aged 15-44 in England and Wales, 1961-2001. *Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 22-31. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf
3. World Health Organization. *WHO Framework on Tobacco Control.* Geneva: World Health Organization, 2003. Available at: http://www.who.int/tobacco/fctc/text/en/fctc_en.pdf
4. NHS Executive. *Manual of Cancer Services Standards*. London: NHS Executive, 2000.
5. Department of Health. *NHS Cancer Plan*. London: Department of Health, 2000.
6. Department of Health. *Saving lives: Our Healthier Nation*. London: The Stationery Office, 1999.
7. World Bank. *Economics of Tobacco Control*. Washington: World Bank, 1999. Available at: http://www1.worldbank.org/tobacco/book/pdf/tobacco.pdf
8. Department of Health. *Smoking kills – a White Paper on tobacco.* London: The Stationery Office, 1998.

Updated: March 2011

Years of life lost due to mortality from skin cancers other than malignant melanoma

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from skin cancers other than malignant melanoma (ICD-10 C44).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		15G_058CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		15G_058DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from skin cancers other than malignant melanoma classified by underlying cause of death (ICD-10 C44), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service*. London: Department of Health, 2004.
2. NHS Executive. *Manual of Cancer Services Standards*. London: NHS Executive, 2000.
3. Department of Health. *NHS Cancer Plan*. London: Department of Health, 2000.
4. Department of Health. *Saving lives: Our Healthier Nation*. London: The Stationery Office, 1999.
5. World Bank. *Economics of Tobacco Control*. Washington: World Bank, 1999.
   http://www1.worldbank.org/tobacco/book/pdf/tobacco.pdf
6. Department of Health. *Smoking kills – a White Paper on tobacco.* London: The Stationery Office, 1998.
7. Brock A, Griffiths C. Trends in the mortality of young adults aged 15-44 in England and Wales, 1961-2001. *Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 22-31. Available at:
   http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf
8. World Health Organization. *WHO Framework on Tobacco Control*. Geneva: World Health Organization, 2005.

Updated: March 2011

Incidence of stomach cancer

Purpose:

To reduce the incidence of stomach cancer.

Definition of indicator and its variants:

Registrations for stomach cancer (ICD-10 C16 equivalent to ICD-9 151).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Indirectly age-standardised registration ratio (SRR) and number of registrations	MFP	All ages <75	E&W, E, GOR, ONS area, SHA, LA, PCO	2006-08		12A_154SR00++_08_V1 12A_154SR0074_08_V1
		All ages			1993-08	12A_154SRT00++_08_V1
Directly age-standardised registration rate and number of registrations	MFP	All ages < 75	E&W, E, GOR, ONS area, SHA, LA, PCO	2006-08		12A_154DR00++_08_V1 12A_154DR0074_08_V1
		All ages	E&W, E, GOR, ONS area, SHA, LA, PCO		1993-08	12A_154DRT00++_08_V1

Numerator:

Numerator data - Cancer registrations for stomach cancer (ICD-10 C16, ICD-9 151) in the respective calendar years.

Source of numerator data - Regional Cancer Registries and Office for National Statistics (ONS).

Comments on numerator data - Registration data for years 1993-2005 were extracted by ONS in November 2008. Data for 2006 are as registered by the end of September 2008. The data extracts for 2007 and 2008 are the same as used for the respective ONS Annual Reference Volume (series MB1). For all years 1993 to 2006 organisational codes were assigned using the postcode of usual residence and the August 2008 edition of the National Statistics Postcode Directory. Years 2007 and 2008 used the May 2010 and November 2010 editions respectively. Results in the current *Compendium* may differ from those of previous issues because of changes in methodology to extract data by area, and also because of data enhancements by ONS. Cancer registrations are also continuously being updated retrospectively and ONS records may have been updated since previous analyses.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 3: Explanations of statistical methods used in the *Compendium*.

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Kuper H, Boffetta P, Adami H.O. Tobacco use and cancer causation: association by tumour type. *J Intern Med* 2002; 252(3): 206-224.
2. Department of Health. *Improving Outcomes in Upper Gastro-intestinal Cancers - The Manual*. London: Department of Health, 2001.
3. ONS. *Cancer Statistics Registrations - Registrations of cancer diagnosed in 2008, England.* Series MB1 No 39. London: ONS, 2010. Available at: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=8843

Updated: June 2011

Mortality from stomach cancer

Purpose:

To reduce deaths from stomach cancer.

Definition of indicator and its variants:

Mortality from stomach cancer (ICD-10 C16 equivalent to ICD-9 151).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		12B_155NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		12B_155CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		12B_155SM00++_09_V1 12B_155SM0074_09_V1
		All ages			1993-09	12B_155SMT00++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		12B_155DR00++_09_V1 12B_155DR0074_09_V1
		All ages			1993-09	12B_155DRT00++_09_V1

Numerator:

Numerator data - Deaths from stomach cancer, classified by underlying cause of death (ICD-10 C16, ICD-9 151 adjusted), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males   All Ages: 1.019
Females   All Ages: 1

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1.   Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service*. London: Department of Health, 2004.
2.   Department of Health. *Improving Outcomes in Upper Gastro-intestinal Cancers - The manual*. London: Department of Health, 2001.
3.   World Health Organization. *WHO Framework on Tobacco Control*. Geneva: World Health Organization, 2003. Available at http://www.who.int/tobacco/fctc/text/en/fctc_en.pdf
4.   Department of Health. *Improving Outcomes in Upper Gastro-intestinal Cancers - The research evidence*. London: Department of Health, 2001.
5.   Brock A, Griffiths C. Trends in the mortality of young adults aged 15-44 in England and Wales, 1961-2001. *Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 22-31. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf
6.   NHS Executive*. Manual of Cancer Services Standards*. London: NHS Executive, 2000.
7.   Department of Health. *NHS Cancer Plan*. London: Department of Health, 2000.
8.   Department of Health. *Saving lives: Our Healthier Nation*. London: The Stationery Office, 1999.
9.   Department of Health. *Smoking kills – a White Paper on tobacco*. London: The Stationery Office, 1998.
10. World Bank. *Economics of Tobacco Control*. Washington: World Bank, 1999.

Updated: March 2011

Survival following diagnosis of stomach cancer

Purpose:

To provide comparative measures of the outcome of cancer treatment by area of residence, using geographical variations in cancer survival. Cancer survival is a key operational measure of the success of cancer treatment services. The principle of equity of access to optimal standards of National Health Service (NHS) cancer treatment was explicitly endorsed in the Calman-Hine report of 1995, which noted: "*All patients should have access to a uniformly high quality of care in the community or hospital wherever they may live to ensure the maximum possible cure rates and best quality of life*"[1]. A further policy document stated that from April 1999, patients with suspected breast cancer "*will be able to see a specialist within two weeks of their GP deciding they need to be seen urgently, and requesting an appointment*"[2]. Similar commitments have come into force for other cancers since April 2000. These policies are expected to lead to earlier diagnosis for all patients and more equitable access to treatment. The NHS Cancer Plan extended these commitments to improve cancer survival in England to amongst the best in Europe[3]. Cancer survival rates are outcome measures that can form part of the baseline for monitoring the future impact of these policies. Geographic differences in cancer survival are expected to decline over time if policy goals are achieved.

Definition of indicator and its variants:

Relative survival rate at one and five years after diagnosis for patients diagnosed in England during 2001-03 and followed up to the end of the year 2008. Cancer patients have higher mortality than the general population, but they do not all die of cancer. The relative survival rate is the ratio of the survival rate actually observed among the cancer patients and the survival rate that would have been expected if they had only had the same overall mortality rates as the general population. Thus, if five-year survival is 60% among a group of cancer patients of whom 90% would have been expected to survive that long, the relative survival is 67% (60/90). By convention, relative survival is described as a rate, although strictly it is a ratio of two percentages.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number and one-year relative survival rate (%)	MFP	15-99	E, GOR, SHA, CN	2001-03		12C_405PCP1_03_V1
Number and five-year relative survival rate (%)	MFP	15-99	E, GOR, SHA, CN	2001-03		12C_405PCP2_03_V1

Numerator:

Numerator data - Observed survival rate, derived from the distribution of survival times from the date of diagnosis (of a primary, invasive, malignant neoplasm) to the earliest date among the date of death, the date of emigration, and the cut-off date of follow-up (31 December 2008), for cancer patients who were diagnosed during 2001-03 and resident in England at the time of diagnosis. Analyses published prior to the July 2009 Compendium release include only first primary malignancies. From the July 2009 release onwards, higher order primary malignancies are also retained. The geographical area of each patient is defined by residence at the time of diagnosis. Records with faulty data, and those of patients diagnosed with in situ tumours, tumours uncertain as to whether benign or malignant, metastatic, or uncertain whether primary or metastatic, are excluded from analysis.

Source of numerator data - National Cancer Intelligence Centre (NCIC), Office for National Statistics (ONS) derived from NHS regional cancer registries; National Health Service Central Register.

Comments on numerator data -

Denominator:

Denominator data - The expected survival rate among the cancer patients, derived from life tables specific for the calendar year of death, single year of age, sex, Government Office Region of residence and deprivation.

Source of denominator data - Office for National Statistics (ONS).

Statistical methods:

The cumulative probability of death at a given time since diagnosis, relative to the corresponding probability in the general population, is estimated by comparing the death rates among the cancer patients in successive intervals of time since diagnosis with the all-causes death rate in the general population for the same sex and age group[4]. This is derived from life tables for the Government Office Region in which the patient lives. Life tables were created that were specific for calendar year of death, single year of age, sex, Government Office Region and deprivation. Life tables were constructed for the years 1991, 2001 and 2005 using ONS mid-year population estimates and the mean annual number of deaths in the three years centred on those index years. Life tables for

the intervening years were then created by linear interpolation. The life tables for 2005 were used for years 2006 to 2008 without interpolation.

The relative survival rates for the pooled three-year time period have been directly age-standardised to take into account any variation in relative survival by age. The standard population used is the number of persons who were diagnosed with the particular cancer under consideration in England and Wales during the period 1986-90. These were broken down into three age (at diagnosis) groups: 15-69, 70-79, and 80-99 years.

Male, female, and person relative survival rates are age-standardised using the same person standard population and may therefore be compared against each other. Rates for different cancers, however, are standardised using different standard populations, and in some instances different age groupings, and should therefore not be compared.

Annex 3 of the *Compendium User Guide*: Explanations of statistical methods used in the *Compendium*.

Interpretation of indicators:

Type of Indicator - The relative survival rate can be interpreted as an estimate of the proportion of cancer patients who die of their disease, after adjustment for death from other causes. A relative survival rate of 100% for a given period would imply that the cancer patients had had the same survival (or death) rates as the general population, not that they had all survived. Similarly, if the relative survival rate remains constant at (say) ten or more years after diagnosis, this implies that the ten-year survivors no longer have higher mortality than the general population.

Quality of indicator - Annex 12 of the *Compendium User Guide* describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Potential value of indicator:

Cancer survival is a broad indicator - differences may be due to a range of factors, of which the quality of treatment is only one. Differences in cancer survival between geographical areas should therefore be the origin of further enquiry, not the basis for simplistic conclusions about the efficacy of cancer treatment. The geographical area of residence at cancer diagnosis is a proxy for several aspects of health care, including the quality of primary care, the speed of referral and the quality of treatment services. It may also be a proxy for other factors, not readily measured, such as the degree of understanding of cancer symptoms and what to do about them among the local population, variations in the extent of disease at diagnosis (stage) and in the histology and grade of tumours, and artefacts in the data. If geographical survival differences can be attributed to differences in knowledge of cancer or the extent of disease at diagnosis, public health responses could be organised. Differences in cancer survival between geographical areas may also "turn out to be due to the persistence of outmoded practices, or other remediable deficiencies in service provision or therapeutic regimes, and correcting these should lead to an improvement in overall standards of care"[5].

Further reading:

A comprehensive monograph on cancer survival in England and Wales has been published[6], covering 2.9 million patients diagnosed with one of 47 adult cancers and 11 childhood cancers during 1971-90, and followed up to the end of 1995. It includes comprehensive analyses by age, sex, and NHS Region, and by socio-economic status (in five categories from affluent to deprived). Updated results for England and Wales have been published in 2004 and 2008 with a chapter for each of the 21 most common cancers.[7, 8] More limited analyses have also been published for cancer patients diagnosed during 1991-93 and followed up to 1998, and diagnosed during 1993-95 and followed up to 2000. [9, 10] Five-year age-standardised relative survival rates for 21 major cancers based on diagnoses in five year periods between 1998 and 2007 are available on the National Statistics website.[11] An early assessment of the impact of the NHS National Cancer Plan on relative survival has been published.[12] An all-cancer relative survival index for patients diagnosed 1991-2006 has been presented by PCT in England.[13] Cancer survival by Cancer Network has been presented for patients diagnosed with one of six cancers 1991-2006.[13]

1. Expert Advisory Group on Cancer. *A policy framework for commissioning cancer services.* London: Department of Health, 1995.
2. NHS Executive. *The new NHS. Modern. Dependable.* London: Department of Health, 1997.
3. Department of Health. *The NHS Cancer Plan: three-year progress report - maintaining the momentum.* London: Department of Health, 2003.
4. Estève J, Benhamou E, Croasdale M, Raymond L. Relative survival and the estimation of net survival: elements for further discussion. *Stat Med* 1990; 9: 529-38.
5. Clinical Outcomes Working Group. *Clinical outcome indicators, July 1996.* Edinburgh: The Scottish Office, 1996.
6. Coleman M.P, Babb P, Damiecki P, Grosclaude P, Honjo S, Jones J et al. *Cancer survival trends in England and Wales 1971-1995: deprivation and NHS Region.* Series SMPS No.61. London: The Stationery Office, 1999, 1-695.

7. Coleman M.P, Rachet B, Woods L.M, Mitry E, Riga M, Cooper N et al. Trends and socioeconomic inequalities in cancer survival in England and Wales up to 2001. British Journal of Cancer 2004; 90:1367-1373.
8. Mitry E, Rachet B, Quinn M.J, Cooper N, Coleman M.P. Survival from cancer of the stomach in England & Wales up to 2001. *British Journal of Cancer* 2008; 99:S16-S18.
9. Coleman M.P, Babb P, Harris S, Quinn M.J, Sloggett A, De Stavola B.L. Cancer survival in England and Wales, 1991-1998. *Office for National Statistics Health Statistics Quarterly* 2000; 6: 71-80.
10. Office for National Statistics. Cancer survival in the health authorities of England,1993-2000. Report. *Office for National Statistics Health Statistics Quarterly* 2002;13: 95-103.
11. Office for National Statistics. *Survival Rates in England and Wales, 1998-2001, 1999-2002, 1999-03; Survival Rates in England 2000-04, 2001-06*. National Statistics website. Available at: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=14007&Pos=3&ColRank=1&Rank=422 , accessed 16 September 2010.
12. Rachet B, Maringe C, Nur U, Quaresma M, Shah A, Woods LM, et al. Population-based cancer survival trends in England and Wales up to 2007: an assessment of the NHS cancer plan for England. *Lancet Oncol* 2009;10:351-69.
13. Office for National Statistics. *Cancer survival by cancer network, patients diagnosed 1991-2006, followed up to 2007*. National Statistics website. Available at: http://www.statistics.gov.uk/STATBASE/Product.asp?vlnk=15387. Accessed 15 September 2010.

Updated: October 2010

Deaths at home from stomach cancer

Purpose:

To improve palliative care and service planning for cancer patients in the terminal stages of life, allowing more of them the choice of dying at home.

Definition of indicator and its variants:

The proportion of deaths from stomach cancer (ICD-10 C16) that occur at home.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Percent of deaths at home	MFP	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		12D_192PC_09_V1
Indirectly age-standardised deaths at home rate per 100 deaths and number of deaths at home	MFP	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		12D_192ISR_09_V1

Numerator:

Numerator data - Deaths at home from stomach cancer, classified by underlying cause of death (ICD-10 C16), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

Information about the place of death is found on the mortality record in the communal establishment field. It contains one of:

- a 5 digit code identifying a communal establishment or institution (e.g. hospital, nursing home, residential home);
- an "H" code which indicates that the person is certified as having died at their home address and that this is not a communal establishment or;
- an "E" code which indicates that the person died elsewhere.

The communal establishments are themselves classified into 84 categories (e.g. general hospital, mental nursing home, nursing home etc) and can be further distinguished by whether they are an NHS or Non-NHS establishment.

It is currently ONS practice to include nursing homes with hospitals under a broader group - "Other hospitals and communal establishments for the care of the sick" - and also to include residential homes under "Other communal establishments". This is because of concerns highlighted by the ONS regarding the accuracy of the recorded status of some communal establishments, particularly nursing homes and residential homes.

It is therefore not possible to include nursing home or residential home deaths as a "home" death. For this indicator, a "home" death is defined as one that has the "H" code in the communal establishment field, i.e. where the death has occurred at the home address and that address is not of a communal establishment.

Denominator:

Denominator data - All deaths from stomach cancer, classified by underlying cause of death (ICD-10 C16), registered in the respective calendar year(s).

Source of denominator data - ONS.

Comments on denominator data - Includes deaths in all categories of communal establishment code, i.e. deaths in all communal establishments, at home, and elsewhere.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*. See Annex 2 for more details.

Statistical methods:

The age-standardised deaths at home rate utilises the indirect method of standardisation. The direct method was found not to be robust as it was affected by small numerator and denominator counts in specific age groups.

Indirect standardisation requires the computation of the ratio of an area's observed number of events to its expected number of events if it had experienced the standard age-specific rates. This age-standardised ratio can be converted into a rate by multiplying it by the crude rate of the standard population.

The standard rates used are those of England for the respective calendar year(s). Male and female rates have been standardised separately. The rate for persons is standardised for both age and sex.

This methodology is similar to that used for the Clinical Indicators and is described in detail in:

Annex 3: Explanations of statistical methods used in the *Compendium* (under the sections entitled "Indirectly Standardised Rates For Clinical Indicators" and "Confidence Intervals Of Indirectly Standardised Rates For Clinical Indicators").

Interpretation of indicators:

Type of Indicator - This is a condition-specific cross-sectional comparative indicator reflecting events which act as a proxy for outcome (quality of dying). In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable areas.

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - 95%. Some of the values and factors influencing them may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of deaths may be small at individual organisational level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% probability, will contain the underlying value of the indicator. If the confidence interval for an organisation's rate is outside the range of the national confidence intervals, the difference between the two rates is considered statistically significant. If the confidence intervals for two rates overlap, in most cases the difference between the rates would not be considered statistically significant.

Effect of Case-Mix / severity - Severity of the cancer and need for hospital care have implications for those who wish to die at home being able to do so. The data available do not allow adjustment for these factors.

Other Potential Confounding Factors - A number of factors outside the control of the NHS such as personal choice, availability of hospices, and family/community support may contribute to the variation shown by the indicator.

Relevant National initiatives:

1. Department of Health. *End of life care strategy : Promoting high quality care for all adults at the end of life*. London: Department of Health , 2008.
   http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_086277
2. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service*. London: Department of Health, 2004.
3. Department of Health. *Pioneering Schemes Named Best of the Best. NHS Beacons – Part of a Concerted Campaign to Improve Cancer Services.* Department of Health, 1999. Press release: reference 1999/0375
4. Commission for Health Improvement. *NHS Cancer Care in England and Wales. National Service Framework Assessments No.1*. London: Commission for Health Improvement, 2001.

Further reading:

1. Higginson I.J, Thompson M. Children and young people who die from cancer: epidemiology and place of death in England (1995-9). *British Medical Journal* 2003; 327: 478-479.
2. Grande GE, Todd CJ, Barclay SIG, Farquhar MC. Does hospital at home for palliative care facilitate death at home? Randomised controlled trial. *British Medical Journal* 1999; 319: 1472-1475.
3. Higginson I.J, Jarman B, Astin P, Dolan S. Do social factors affect where patients die: an analysis of 10 years of cancer deaths in England. *Journal of Public Health Medicine* 1999; 21(1): 23-28.

Updated: March 2011

Years of life lost due to mortality from stomach cancer

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from stomach cancer (ICD-10 C16).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		12E_062CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		12E_062DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from stomach cancer classified by underlying cause of death (ICD-10 C16), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *The NHS cancer plan and the new NHS: Providing a patient-centred service*. London: Department of Health, 2004.
2. Department of Health. *Improving Outcomes in Upper Gastro-intestinal Cancers - The manual*. London: Department of Health, 2001.
3. World Health Organization. *WHO Framework on Tobacco Control*. Geneva: World Health Organization, 2003. Available at http://www.who.int/tobacco/fctc/text/en/fctc_en.pdf
4. Department of Health. *Improving Outcomes in Upper Gastro-intestinal Cancers - The research evidence*. London: Department of Health, 2001.
5. Brock A, Griffiths C. Trends in the mortality of young adults aged 15-44 in England and Wales, 1961-2001. *Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 22-31. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf
6. NHS Executive. *Manual of Cancer Services Standards*. London: NHS Executive, 2000.
7. Department of Health. *NHS Cancer Plan*. London: Department of Health, 2000.
8. Department of Health. *Saving lives: Our Healthier Nation*. London: The Stationery Office, 1999.
9. Department of Health. *Smoking kills – a White Paper on tobacco*. London: The Stationery Office, 1998.
10. World Bank. *Economics of Tobacco Control*. Washington: World Bank, 1999.

Updated: March 2011

Mortality from all circulatory diseases

Purpose:

To reduce deaths from circulatory diseases. The directly age-standardised mortality rate from all circulatory diseases for persons aged under 75 is a target indicator in the *Saving Lives: Our Healthier Nation* strategy (See "Further reading"). The target is a 40% reduction by the year 2010 from the baseline rate in 1995-97.

Definition of indicator and its variants:

Mortality from all circulatory diseases (ICD-10 I00-I99 equivalent to ICD-9 390-459).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		06A_076NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		06A_076CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <65, <75, 65-74	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		06A_076SM00++_09_V1 06A_076SM0064_09_V1 06A_076SM0074_09_V1 06A_076SM6574_09_V1
		All ages, <65, <75, 65-74			1993-09	06A_076SMT00++_09_V1 06A_076SMT0064_09_V1 06A_076SMT0074_09_V1 06A_076SMT6574_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <65, <75, 65-74	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		06A_076DR00++_09_V1 06A_076DR0064_09_V1 06A_076DR0074_09_V1 06A_076DR6574_09_V1
		<75#		1995-97#		06A_076DR0074_97_V5
		All ages, <65, <75, 65-74			1993-09	06A_076DRT00++_09_V1 06A_076DRT0064_09_V1 06A_076DRT0074_09_V1 06A_076DRT6574_09_V1

#*Our Healthier Nation* baseline

Numerator:

Numerator data - Deaths from all circulatory diseases, classified by underlying cause of death (ICD-10 I00-I99, ICD-9 390-459 adjusted), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

| Males | 0-74yrs: 1.012 | 75-84yrs: 1.039 | 85+yrs: 1.069 |
| Females | 0-74yrs: 1.015 | 75-84yrs: 1.042 | 85+yrs: 1.057 |

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population
Annex 6: Goals of *Our Healthier Nation*

Interpretation of indicators:

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Royal College of Physicians. *Acute Myocardial Infarction : A Core Data Set for monitoring standards of care*. London: Royal College of Physicians, 1999. Available at: http://www.rcplondon.ac.uk/pubs/books/ami/
2. NHS Information Authority. *Acute Myocardial Infarction Dataset Project*. London: NHS Information Authority, 2002.
3. Birkhead J, Goldacre M, Mason A, Wilkinson E, Amess M, Cleary R (eds). *Health Outcome Indicators: Myocardial Infarction. Report of a working group to the Department of Health*. Oxford: National Centre for Health Outcomes Development, 1999. Available at: http://nchod.uhce.ox.ac.uk/myocardial.pdf
4. Department of Health. *Chronic Disease Management and self-care.* London: Department of Health, 2002
5. NHS Information Authority*. Coronary Heart Disease Dataset Project*. NHS Information Authority website: http://www.nhsia.nhs.uk/phsmi/datasets/pages/chd.asp
6. Department of Health. *Coronary Heart Disease Information Strategy*. London: Department of Health, 2001
7. NHS Modernisation Agency. *Coronary Heart Disease*. NHS Modernisation Agency website: http://www.modern.nhs.uk/scripts/default.asp?site_id=23
8. Department of Health. *Delivering Better Heart Services : Progress Report 2003*. London: Department of Health, 2003.
9. World Health Organization. *MONICA Monograph and Multimedia Sourcebook*. Geneva: World Health Organization, 2003.
10. Commission for Health Improvement, Audit Commission. *National Service Framework for Coronary Heart Disease Review*. London: Commission for Health Improvement, 2003.
11. Department of Health. *National Service Framework for Coronary Heart Disease*. London: Department of Health, 2000.
12. Department of Health. *National Service Framework for Coronary Heart Disease. Delivering better heart services Progress report: 2003*. London: Department of Health, 2003.
13. Myocardial Infarction National Audit Project Team. *How Hospitals Manage Heart Attacks.* London: Royal College of Physicians, 2003. Available at: http://www.rcplondon.ac.uk/pubs/books/minap/HowHospitalsManageHeartAttacksJune2003.pdf
14. Department of Health. *Saving Lives: Our Healthier Nation*. London: The Stationery Office, 1999.

Updated: March 2011

Years of life lost due to mortality from all circulatory diseases

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from all circulatory diseases (ICD-10 I00-I99).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		06B_107CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		06B_107DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from all circulatory diseases classified by underlying cause of death (ICD-10 I00-I99), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Royal College of Physicians. *Acute Myocardial Infarction : A Core Data Set for monitoring standards of care*. London: Royal College of Physicians, 1999. Available at: http://old.rcplondon.ac.uk/pubs/books/ami/
2. NHS Information Authority. *Acute Myocardial Infarction Dataset Project*. London: NHS Information Authority, 2002.
3. Birkhead J, Goldacre M, Mason A, Wilkinson E, Amess M, Cleary R (eds). *Health Outcome Indicators: Myocardial Infarction. Report of a working group to the Department of Health*. Oxford: National Centre for Health Outcomes Development, 1999. Available at: http://nchod.uhce.ox.ac.uk/myocardial.pdf
4. Department of Health. *Chronic Disease Management and self-care*. London: Department of Health, 2002
5. Department of Health. *Coronary Heart Disease Information Strategy*. London: Department of Health, 2001
6. Department of Health. *Delivering Better Heart Services : Progress Report 2003*. London: Department of Health, 2003.
7. World Health Organization. *MONICA Monograph and Multimedia Sourcebook*. Geneva: World Health Organization, 2003.
8. Commission for Health Improvement, Audit Commission. *National Service Framework for Coronary Heart Disease Review*. London: Commission for Health Improvement, 2003.
9. Department of Health. *National Service Framework for Coronary Heart Disease*. London: Department of Health, 2000.
10. Department of Health. *National Service Framework for Coronary Heart Disease. Delivering better heart services Progress report: 2003*. London: Department of Health, 2003.
11. Myocardial Infarction National Audit Project Team. *How Hospitals Manage Heart Attacks.* London: Royal College of Physicians, 2003. Available at: http://old.rcplondon.ac.uk/pubs/books/minap/HowHospitalsManageHeartAttacksJune2003.pdf
12. Department of Health. *Saving Lives: Our Healthier Nation*. London: The Stationery Office, 1999.

Updated: March 2011

Mortality from chronic rheumatic heart disease

Purpose:

To reduce deaths from chronic rheumatic heart disease.

Definition of indicator and its variants:

Mortality from chronic rheumatic heart disease (ICD-10 I05).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <75, 5-44	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		07A_135SM00++_09_V1 07A_135SM0074_09_V1 07A_135SM0544_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <75, 5-44	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		07A_135DR00++_09_V1 07A_135DR0074_09_V1 07A_135DR0544_09_V1

Numerator:

Numerator data - Deaths from chronic rheumatic heart disease, classified by underlying cause of death (ICD-10 I05-I09), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1.   Department of Health. *Chronic Disease Management and self-care.* London: Department of Health, 2002.

2. Department of Health. *Coronary Heart Disease Information Strategy*. London: Department of Health, 2001.
3. Department of Health. *Delivering Better Heart Services: Progress Report 2003*. London: Department of Health, 2003.
4. World Health Organization. *MONICA Monograph and Multimedia Sourcebook*. Geneva: World Health Organization, 2003.
5. Department of Health. *National Service Framework for Coronary Heart Disease*. London: Department of Health, 2000.
6. Department of Health. *National Service Framework for Coronary Heart Disease. Delivering better heart services Progress report: 2003*. London: Department of Health.
7. Commission for Health Improvement, Audit Commission. *National Service Framework for Coronary Heart Disease Review*. London: Commission for Health Improvement, 2003.
8. Department of Health. *Saving Lives: Our Healthier Nation.* London: The Stationery Office, 1999.
9. Department of Health. *Strategic Reviews of Research and Development Coronary Heart Disease*. London: Department of Health, 2002.

Updated: March 2011

Mortality from coronary heart disease

Purpose:

To reduce deaths from coronary heart disease.

Definition of indicator and its variants:

Mortality from coronary heart disease (ICD-10 I20-I25 equivalent to ICD-9 410-414).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		09A_054NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		09A_054CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <65, <75, 65-74	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		09A_054SM00++_09_V1 09A_054SM0064_09_V1 09A_054SM0074_09_V1 09A_054SM6574_09_V1
		All ages, <65, <75, 65-74			1993-09	09A_054SMT00++_09_V1 09A_054SMT0064_09_V1 09A_054SMT0074_09_V1 09A_054SMT6574_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <65, <75, 65-74	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		09A_054DR00++_09_V1 09A_054DR0064_09_V1 09A_054DR0074_09_V1 09A_054DR6574_09_V1
		All ages, <65, <75, 65-74			1993-09	09A_054DRT00++_09_V1 09A_054DRT0064_09_V1 09A_054DRT0074_09_V1 09A_054DRT6574_09_V1

Numerator:

Numerator data - Deaths from coronary heart disease, classified by underlying cause of death (ICD-10 I20-I25, ICD-9 410-414 adjusted), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

The directly age-standardised mortality rates from coronary heart disease for persons aged under 65 and 65-74 were target indicators in the *Health of the Nation* strategy (See "Further reading").

In January 2001, ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by ONS. Trend data cannot include years prior to 1993, because ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males   All Ages: 1.005

Females   All Ages: 1.007

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia.*

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population
Annex 6: Goals of *Our Healthier Nation*

Interpretation of indicators:

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1.   Department of Health. *The National Service Framework for Coronary Heart Disease: winning the war on heart disease*. London: Department of Health, 2004.
2.   Commission for Health Improvement, Audit Commission. *National Service Framework for Coronary Heart Disease Review*. London: Commission for Health Improvement, 2003.
3.   Department of Health. *Delivering Better Heart Services : Progress Report 2003*. Department of Health, 2003.
4.   Department of Health. *National Service Framework for Coronary Heart Disease. Delivering better heart services Progress report: 2003.* London: Department of Health, 2003.
5.   Sowerby Centre for Health Informatics. *Health Informatics Programme for Coronary Heart Disease* .
6.   World Health Organization. *MONICA Monograph and Multimedia Sourcebook*. Geneva: World Health Organization, 2003.
7.   Department of Health. *Chronic Disease Management and self-care*. London: Department of Health, 2002.
8.   Department of Health. *Strategic Reviews of Research and Development Coronary Heart Disease*. London: Department of Health, 2002.
9.   Department of Health. *Coronary Heart Disease Information Strategy*. London: Department of Health, 2001.
10.   Department of Health. *National Service Framework for Coronary Heart Disease*. London: Department of Health, 2000. Available at:
      http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4094275
11.   Department of Health. *Saving Lives: Our Healthier Nation*. London: The Stationery Office, 1999.
12.   Department of Health. *Health of the Nation - A Strategy for Health in England.* London: Her Majesty's Stationery Office, 1992.

Updated: March 2011

Mortality from acute myocardial infarction

Purpose:

To reduce deaths from acute myocardial infarction.

Definition of indicator and its variants:

Mortality from acute myocardial infarction (ICD-10 I21-I22).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <75, 35-64	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		09B_055SM00++_09_V1 09B_055SM0074_09_V1 09B_055SM3564_09_V1
		All ages			1993-09	09B_055SMT00++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <75, 35-64	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		09B_055DR00++_09_V1 09B_055DR0074_09_V1 09B_055DR3564_09_V1
		All ages			1993-09	09B_055DRT00++_09_V1

Numerator:

Numerator data - Deaths from acute myocardial infarction, classified by underlying cause of death (ICD-10 I21-I22), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males	0-74yrs: 0.944	75-84yrs: 0.941	85+yrs: 0.907
Females	0-74yrs: 0.946	75-84yrs: 0.939	85+yrs: 0.894

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*

Interpretation of indicators:

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Royal College of Physicians. *Acute Myocardial Infarction: A Core Data Set for monitoring standards of care.* London: Royal College of Physicians, 1999*.* Available at: http://old.rcplondon.ac.uk/pubs/books/ami/
2. NHS Information Authority. *Acute Myocardial Infarction Dataset Project.* London: NHS Information Authority, 2002*.*
3. Birkhead J, Goldacre M, Mason A, Wilkinson E, Amess M, Cleary R (eds). *Health Outcome Indicators: Myocardial Infarction. Report of a working group to the Department of Health.* Oxford: National Centre for Health Outcomes Development, 1999. Available at: http://nchod.uhce.ox.ac.uk/myocardial.pdf
4. Department of Health. *Coronary Heart Disease Information Strategy.* London: Department of Health, 2001.
5. Department of Health. *Health Improvement And Prevention.* London: Department of Health, 2002.
6. World Health Organization. *MONICA Monograph and Multimedia Sourcebook*. Geneva: World Health Organization, 2003.
7. Commission for Health Improvement, Audit Commission. *National Service Framework for Coronary Heart Disease Review*. London: Commission for Health Improvement, 2003.
8. Department of Health. *National Service Framework for Coronary Heart Disease*. London: Department of Health, 2000.
9. Department of Health. *National Service Framework for Coronary Heart Disease. Delivering better heart services Progress report: 2003*. London: Department of Health, 2003.
10. Myocardial Infarction National Audit Project Team, Royal College of Physicians. *How Hospitals Manage Heart Attacks*. London: Royal College of Physicians, 2003. Available at: http://old.rcplondon.ac.uk/pubs/books/minap/HowHospitalsManageHeartAttacksJune2003.pdf
11. Department of Health. *Saving Lives: Our Healthier Nation.* London: The Stationery Office, 1999.

Updated: March 2011

Mortality from ischaemic heart disease other than acute myocardial infarction

Purpose:

To reduce deaths from coronary heart disease.

Definition of indicator and its variants:

Mortality from ischaemic heart disease other than acute myocardial infarction (ICD-10 I20, I23-I25).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, 35-64	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		09C_178SM00++_09_V1 09C_178SM3564_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, 35-64	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		09C_178DR00++_09_V1 09C_178DR3564_09_V1

Numerator:

Numerator data - Deaths from ischaemic heart disease (IHD) other than acute myocardial infarction, classified by underlying cause of death (ICD-10 I20, I23-I25), registered in the respective calendar years.

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

The indicator is redefined using the new ICD-10 definition. There is no direct equivalence between the ICD-9 and ICD-10 definitions for this indicator. The change in coding scheme has resulted in deaths from IHD moving between codes, resulting in a decrease in the number of deaths assigned to Acute Myocardial Infarction (AMI). This is because in ICD-9, acute ischaemic heart disease or ischaemic heart disease with a stated duration of less than four weeks were coded to AMI (410). In ICD-10 these deaths are coded to Acute Ischaemic Heart Disease (I24.9), which is a new code. This accounted for about 260 deaths in 1999. A further 3,600 deaths coded to 410 in ICD-9 have been coded to Chronic Ischaemic Heart Disease (I25) in ICD-10. These are deaths which had AMI or other acute ischaemic heart disease on the death certificate, but with a stated duration of more than four weeks.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*

Interpretation of indicators:

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *Chronic Disease Management and Self-care*. London: Department of Health, 2002.
2. Department of Health. *Coronary Heart Disease Information Strategy*. London: Department of Health, 2001.
3. Department of Health. *Delivering Better Heart Services : Progress Report 2003*. London: Department of Health, 2003.
4. World Health Organization. *MONICA Monograph and Multimedia Sourcebook.* Geneva: World Health Organization, 2003.
5. Commission for Health Improvement, Audit Commission. *National Service Framework for Coronary Heart Disease Review*. London: Commission for Health Improvement, 2003.
6. Department of Health. *National Service Framework for Coronary Heart Disease.* London: Department of Health, 2000.
7. Department of Health. *National Service Framework for Coronary Heart Disease. Delivering better heart services Progress report: 2003*. London: Department of Health, 2003.
8. Department of Health. *Saving Lives: Our Healthier Nation.* London: The Stationery Office, 1999.

Updated: March 2011

Deaths within 30 days of emergency admission to hospital: myocardial infarction

Purpose:

Some people with myocardial infarction die before they can be admitted to hospital. There are variations in death rates among those who survive long enough to be admitted. Some of these deaths may be potentially preventable through faster ambulance response time and effective early treatments e.g. thrombolysis. The National Health Service (NHS) may be helped to prevent some of these deaths by seeing comparative figures and learning lessons from follow-up investigations.

Definition of indicator and its variants:

Deaths in hospital and after discharge between 0 and 29 days (inclusive) of an emergency admission to hospital with myocardial infarction.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Indirectly age, sex and 3 digit primary diagnosis-standardised rate per 100,000 (standardised to 2004/05)	P F M	All Ages	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County; LA (boundaries as at April 2009); PCO (boundaries as at October 2006); deprivation group (5, 7 bands);Trust Cluster; Trust.	FY 2008/09	FY 1999/00, FY 2000/01, FY 2001/02, FY 2002/03, FY 2003/04, FY 2004/05, FY 2005/06, FY 2006/07, FY 2007/08	09E_212ISR3AP_09_V1 09E_212ISR3AF_09_V1 09E_212ISR3AM_09_V1

Numerator:

Numerator data - The number of denominator continuous inpatient (CIP) spells following emergency admission for patients aged 35 to 74 years inclusive with a primary diagnosis on admission of myocardial infarction (ICD 10 codes I21-I22), where the patient dies in hospital or after discharge between 0-29 days (inclusive) of admission in the respective financial year.

Deaths that occur outside hospital following discharge but between 0-29 days of admission are included. This was achieved through linkage of Hospital Episode Statistics (HES) data with deaths data from the Office for National Statistics (ONS). Records of all deaths which occurred in England during the period of analysis for each indicator plus 30 days after were obtained from ONS. Linkage was undertaken using the most recent CIP denominator spell for each person discharged alive.

The date of admission, and the date and method of discharge from the last episode in the CIP spell (or HES/ONS linked data), are used to determine the interval between admission and death.

The numerator is the number of denominator CIP spells with the following fields and values:

> The last episode in the CIP spell (or HES/ONS linked*) has:
> > DISMETH* = 4 (discharge method);
> > AND DISDATE* minus ADMIDATE (first episode) = 0-29 days inclusive (discharge date and admission date).

> Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
> > SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

> Fields used from the first episode in a spell include:

PROCODETC (provider code, unmapped). Provider clusters are aggregates of the PROCODETC field.

Counts are by:
age / sex / 3digit primary diagnosis / organisation of residence in CIP spell (values for England are aggregates of these)

where:
age bands are 35-39, … , 70-74;
sex is 1, 2 (male and female).

Source of numerator data - Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year, plus those up to 30 days in the next financial year, England, The NHS Information Centre for health and social care; and the Office for national Statistics.

Comments on numerator data - Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). Admission and death can occur in separate episodes and even in separate hospitals after transfer. A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March.

The indicator includes deaths occurring after transfer to another Trust. For residence based aggregations, deaths are counted to the first valid organisation coded in the spell; for provider based aggregations, (Provider Trusts and Clusters) deaths are counted to the first valid organisation coded in the spell.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details).

Denominator:

Denominator data - The number of finished continuous inpatient spells following an emergency admission for patients of all ages with a primary diagnosis on admission of myocardial infarction (ICD 10 codes I21-I22):

- I21.- Acute myocardial infarction;
- I22.- Subsequent myocardial infarction.

The following fields and values are used for the denominator:

The first episode in the CIPS has:
DIAG_01 in the valid list for this indicator (primary diagnosis);
AND EPIORDER = 1 (episode order);
AND EPITYPE = 1 (episode type);
AND ADMIMETH = 21, 22, 23, 24 or 28 (admission method);
AND EPISTART is valid and >= 01/04/YYYY and <= 31/03/YYYY+1 (episode start date);
AND CLASSPAT = 1 (patient classification);
AND STARTAGE 35-74 (age at start of episode);
AND SEX = 1 or 2 (sex);
AND EPISTAT = 3 (episode status);
AND ADMISORC is not 51, 52 or 53 (admission source);
AND DOB not 01/01/1900 or 01/01/1901 (date of birth).

The last episode in the CIPS (or HES/ONS linked*) has:
DISMETH* = 1-4 (discharge method);
AND DISDATE* is valid (discharge date).

Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Fields used from the first episode in a spell include:
PROCODETC (provider code, unmapped). Provider clusters are aggregates of the PROCODETC field.

Counts are by:
age / sex / 3 digit primary diagnosis / organisation of residence in CIP spell (values for England are aggregates of these)

where:

age bands are 35-39, … , 70-74;
sex is 1, 2 (male and female).

Source of denominator data - Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year, England, The NHS Information Centre for health and social care.

Comments on denominator data – The age range was selected for consistency with indicators recommended in the Coronary Heart Disease National Service framework. There have been changes over the past few years in the way in which myocardial infarction is diagnosed and hence there may be variations between organisations and years in case selection. A decision was made to use the primary diagnosis field, following tests to check where myocardial infarction is usually coded in an episode and in a CIP spell. Myocardial infarction coded elsewhere could refer to admission for other reasons or infarction occurring in hospital.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). There may also be variation between hospitals in the way that they code diagnoses to the fourteen diagnosis fields in each episode, particularly primary diagnosis. For instance, they may code in the order in which the diagnoses were made, or according to their perceived importance or complexity. This may affect whether a particular spell is selected for inclusion in this indicator.

Statistical Methods:

The indicator is indirectly standardised by age, sex and 3 digit primary diagnosis. The person-based rate is standardised by age, sex and 3 digit primary diagnosis using England age, sex and primary diagnosis rates as standards. The gender-specific rates are standardised by age and 3 digit primary diagnosis using person-based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age, sex and diagnosis (first or subsequent myocardial infarction) of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in rates from a previous year, plus the statistical significance of this change, have also been calculated. For all indicators a positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator - This is a condition-specific, cross-sectional annual comparative indicator of outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator - Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation, Local Authority and provider Trust level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence interval overlaps the national rate, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity - A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation (particularly death before admission), may contribute to the variation shown by the indicators. Differences in case-mix, severity of the myocardial infarction, comorbidities and other potential risk factors also contribute to the variation. The data available do not allow adjustment for any of these factors. This may pose less of a constraint at geographical organisation level than at hospital level. We have tried to deal with this constraint by presenting the data in clusters that are similar with respect to institution or organisation type. Gender-specific data standardised to person rates and analyses at England level by the Index of Multiple Deprivation are presented.

Other potential confounding factors - The patterns of providing care may vary between NHS hospital trusts in terms of: extent of prevention and treatment in primary care settings; referral policies and practices; and hospital admission policies and practices. Variation between hospitals in average length of stay may also lead to variation between hospitals in the proportion of deaths occurring in hospital as opposed to in the community after discharge from hospital.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess potentially avoidable factors related to high observed death rates locally are recommended.

Relevant national initiatives:

This indicator is among those recommended by a Working Group on Outcome Indicators for myocardial infarction, set up to advise the Department of Health on new indicators. The indicator was part of the NHS Performance Indicators published by the Department of Health in 1999 and 2000. The Coronary Heart Disease National Service Framework covers national standards for the prevention and treatment of coronary heart disease.

Further reading:

1. Commission on Professional and Hospital Activities. *Hospital Wide Quality Indicators.* Ann Arbor, 1991.
2. Carroll JG. *Monitoring with Indicators: Evaluating the Quality of Patient Care.* Maryland: Aspen Publications, 1992.
3. CRAG Clinical Outcomes Working Group. *Clinical Outcome Indicators.* Edinburgh: The Scottish Office, 1994.
4. Birkhead J, Goldacre M, Mason A, Wilkinson E, Amess M, Cleary R (eds). *Health Outcome Indicators: Myocardial Infarction. Report of a working group to the Department of Health*. Oxford: National Centre for Health Outcomes Development, 1999 (www.nchod.nhs.uk).
5. Department of Health. *Coronary Heart Disease: National service framework – modern standards and service models*. London: Department of Health, 2000.
6. Department of Health. *NHS Performance Indicators: February 2002*. London: Department of Health, 2002.
Department of Health. Coronary Heart Disease National service framework: Leading the way – Progress report 2005. London: Department of Health, 2005.

Updated: November 2010

Deaths within 30 days of a hospital procedure: coronary artery bypass graft

Purpose:

The national confidential enquiries into deaths after surgery (NCEPOD) have, over many years, consistently shown that some deaths are associated with shortcomings in health care. The National Health Service (NHS) may be helped to prevent such potentially avoidable deaths by seeing comparative figures and learning lessons from the confidential enquiries, and from the experience of hospitals with low death rates.

Definition of indicator:

Deaths occurring in hospital and after discharge between 0 and 29 days (inclusive) of a first Coronary Artery Bypass Graft (CABG).

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Indirectly age, sex and method of admission-standardised rate per 100,000 (standardised to 2003/04, 2004/05, 2005/06 pooled)	P F M	All Ages	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County; LA (boundaries as at April 2009); PCO (boundaries as at October 2006); deprivation group (5, 7 bands);Trust Cluster; Trust.	FY 2006/07, FY 2007/08, FY 2008/09 pooled	FYs 1999/00, 2000/01, 2001/02 pooled; FYs 2000/01, 2001/02, 2002/03 pooled; FYs 2001/02, 2002/03, 2003/04 pooled; FYs 2002/03, 2003/04, 2004/05 pooled; FYs 2003/04, 2004/05, 2005/06 pooled; FYs 2004/05, 2005/06, 2006/07 pooled ; FY 2005/06, FY 2006/07, FY 2007/08 pooled	09F_211ISR1CPP1_09_V1 09F_211ISR1CFP1_09_V1 09F_211ISR1CMP1_09_V1
Indirectly age, sex and method of admission-standardised rate per 100,000 (standardised to 2004/05)	P F M	All Ages	E	FY 2008/09	FY 1999/00, FY 2000/01, FY 2001/02, FY 2002/03 FY 2003/04 FY 2004/05, FY 2005/06, FY 2006/07, FY 2007/08	09F_211ISR1CPP2_09_V1 09F_211ISR1CFP2_09_V1 09F_211ISR1CMP2_09_V1

Numerator:

Numerator data - The number of denominator continuous inpatient (CIP) spells i.e. spells with a first Coronary Artery Bypass Graft procedure (OPCS 4 codes K40-K46) except after a Percutaneous Transluminal Coronary Angioplasty (PTCA) (OPCS 4 codes K49-K50 other than K50.2 and K50.3) and / or alongside a heart valve

procedure (OPCS 4 codes K25-K38), where the patient dies in hospital or after discharge between 0-29 days (inclusive) of the first eligible procedure in the spell in the respective financial year(s).

Deaths that occur outside hospital following discharge but between 0-29 days of the procedure are included. This was achieved through linkage of Hospital Episode Statistics (HES) data with deaths data from the Office for National Statistics (ONS). Records of all deaths which occurred in England during the period of analysis for each indicator plus 30 days after were obtained from the ONS. Linkage was undertaken using the most recent CIP denominator spell for each person discharged alive.

The date of the first valid procedure, and the date and method of discharge from the last episode in the CIP spell (or HES/ONS linked data), are used to determine the interval between procedure and death.

Where the operation date is missing, invalid, or after the end of the spell, it is assumed that the procedure took place one day after the start of the episode containing the procedure. If the episode start date is not valid then it is assumed the procedure took place one day after the admission date of the spell. If this is still not valid, then the date is left blank. The exception to this is where the episode starts and ends on the same day, in which case the procedure is assumed to take place on the day the episode started.

The numerator is the number of denominator CIP spells with the following fields and values:

> The last episode in CIP spell (or HES/ONS linked*) has:
> > DISMETH* = 4 (discharge method);
> > AND DISDATE* minus procedure date = 0-29 days inclusive (discharge date and date of valid procedure).

> Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
> > SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

> Fields used from the episode in a spell where the first valid procedure took place include:
> > PROCODETC (provider code, unmapped). Provider clusters are aggregates of the PROCODETC field.

> Counts are by:
> > age / sex / admission method / organisation of residence in CIP spell (values for England are aggregates of these)

> where:
> > age bands are <1, 1-4, 5-9, … , 80-84, 85+;
> > sex is 1, 2 (male and female); and
> > admission method is elective or non-elective.

Source of numerator data - Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year, plus those up to 30 days in the next financial year, England, The NHS Information Centre for health and social care; and the Office for National Statistics.

Comments on numerator data - Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). The selected procedure and death can occur in separate episodes and even in separate hospitals after transfer. A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March.

The numerator relates to death following the first eligible procedure found in a CIP spell in any episode (the first procedure can appear in any of the operation fields in an episode).

The indicator includes deaths occurring after transfer to another Trust. For residence based aggregations, deaths are counted to the first valid organisation coded in the spell; for provider based aggregations, (Provider Trusts and Clusters) deaths are counted to the organisation that performed the procedure.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details).

There may be variation between Trusts in the way that they code operations to the operation fields in each episode. For instance, Trusts may code procedures chronologically, or according to the degree of complexity of the procedure. There may also be variation in the proportion of cases where the operation date is not coded.

Denominator:

Denominator data - The number of continuous inpatient spells where there was at least one Coronary Artery Bypass Graft (CABG) procedure (OPCS 4 codes K40-K46) in any operation field in the spell, except where the CABG occurred after a Percutaneous Transluminal Coronary Angioplasty (PTCA) procedure (OPCS 4 codes K49-K50 other than K50.2 and K50.3) and/or alongside a heart valve procedure (OPCS 4 codes K25-K38). A spell may include more than one operative procedure:

- K40.- Saphenous vein graft replacement of coronary artery
- K41.- Other autograft replacement of coronary artery
- K42.- Allograft replacement of coronary artery
- K43.- Prosthetic replacement of coronary artery
- K44.- Other replacement of coronary artery
- K45.- Connection of thoracic artery to coronary artery
- K46.- Other bypass of coronary artery

Day cases are excluded. A CIP spell may include more than one operative procedure.

The following fields and values are used for the denominator.

The first episode in the CIP spell has:
EPIORDER = 1 (episode order);
AND EPITYPE = 1 or 2 (episode type);
AND EPISTART is valid (episode start date);
AND CLASSPAT = 1 or 5 (patient classification);
AND STARTAGE is either 0-120 or 7001-7007 (age at start of episode);
AND SEX = 1 or 2 (sex);
AND EPISTAT = 3 (episode status);
AND DOB not 01/01/1900 or 01/01/1901 (date of birth).

AND the first episode in the provider spell where the procedure took place has:
ADMIMETH is valid (admission method).

AND the last episode in the CIP spell (or HES/ONS linked*) has:
DISMETH* = 1-4 (discharge method);
AND DISDATE* is valid (discharge date).

AND the episode in the CIP spell where the valid procedure was found has:
CI1C_NEWDATE is valid and between 01/04/YYYY and 31/03/YYYY+1 (date of procedure is within the year);
AND CI1C_NEWOPER = K40-K46 (first procedure is a CABG i.e. not after a PTCA).

AND no heart valve procedures are coded anywhere in the spell (OPERTN_01-12 = K23-K38 (all procedure fields)).

Where the operation date is missing, similar logic to that described in the section on numerator data has been used to provide a proxy date.

Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Fields used from the episode in a spell where the first valid procedure took place include:
PROCODETC (provider code, unmapped). Provider clusters are aggregates of the PROCODETC field.

Counts are by:
age / sex / admission method / organisation of residence in CIP spell (values for England are aggregates of these)

where:
age bands are <1, 1-4, 5-9, … , 80-84, 85+;
sex is 1, 2 (male and female); and
admission method is elective, non-elective.

Source of denominator data - Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year, England, The NHS Information Centre for health and social care.

Comments on denominator data - There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). Denominator CIP spells are selected if there is at least one mention of an eligible procedure. As there may be more than one eligible procedure in a spell, each such spell is only counted once. There may be variation between Trusts in the way that they code operations to the operation fields in each episode. For instance, Trusts may code procedures chronologically, or according to the degree of complexity of the procedure. This may affect which procedure is selected for calculation of interval to death.

Day cases are excluded because CABGs are unlikely to occur in day cases.

Statistical Methods:

The indicator is indirectly standardised by age, sex, and method of admission. The person-based rate is standardised by age, sex, and method of admission using England age, sex, and method of admission rates as standards. The gender-specific rates are standardised by age and method of admission using person-based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age, sex, and method of admission of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in rates from a previous year (or previous set of pooled years), plus the statistical significance of this change, have also been calculated. For all indicators a positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator - This is a procedure-specific, cross-sectional annual comparative indicator of outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator - Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation, Local Authority and provider Trust level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence interval overlaps the national rate, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity - A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may contribute to the variation shown by the indicators. Differences in case-mix, comorbidities and other potential risk factors also contribute to the variation. Current data do not allow assignment of severity of illness and seriousness of operations across continuous inpatient spells, nor do they allow adjustment for these factors. This may pose less of a constraint at geographical organisation level than at hospital level. We have tried to deal with this constraint by presenting the data in clusters that are similar with respect to institution or organisation type. Gender-specific data standardised to person rates as well as analyses at England level by the Index of Multiple Deprivation are presented.

Other potential confounding factors - The patterns of providing care may vary between organisations in terms of: extent of treatment in primary care settings; referral policies and practices; and hospital admission policies and practices. Variation between hospitals in average length of stay may also lead to variation between hospitals in the proportion of deaths occurring in hospital as opposed to in the community after discharge from hospital.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess the extent to which deaths were linked to the previous surgery and truly represented potentially avoidable adverse events are recommended.

Relevant national initiatives:

The National Confidential Enquiry into Perioperative Deaths examines factors associated with perioperative deaths. This indicator has been used by the Department of Health in the NHS Performance Indicators, and by the Commission for Health Improvement and the Healthcare Commission in NHS Performance Ratings, between 1999 and 2005. It has also been used for international comparisons.

Further reading:

1. Commission on Professional and Hospital Activities. *Hospital Wide Quality Indicators.* Ann Arbor, 1991.
2. Callum KG, Carr NJ, Gray AJC, Hargraves CMK, Hoile RW, Ingram GS, Martin IC, Sherry KM. *Functioning as a Team? – The 2002 Report of the National Confidential Enquiry into Perioperative Deaths.* London: NCEPOD, 2002.
3. Department of Health. NHS Performance Indicators: February 2002. London: Department of Health, 2002. Healthcare Commission. 2005 performance ratings: July 2005 website http://ratings2005.healthcarecommission.org.uk/. London: Healthcare Commission, 2005.

Updated: November 2010

Prevalence: coronary heart disease

Purpose:

To ascertain the prevalence of coronary heart disease (CHD) from General Practice records and help ensure high standards of primary health care and treatment delivered to NHS patients.

CHD is the single most common cause of premature death in the UK. The research evidence relating to the management of CHD is well established and if implemented can reduce the risk of premature death from CHD and improve the quality of life for patients.

Definition of indicator and its variants:

Proportion of patients with CHD in a GP registered population.

The register includes all patients who have had coronary revascularisation procedures such as coronary artery bypass grafting (CABG), those with past history of myocardial infarction (heart attack) or other CHD diagnoses, even if they do not have a current active diagnosis of CHD.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		09H_600PC_10_V1

Numerator:

Numerator data - Patients registered with GP practices with a coded diagnosis of CHD.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

Denominator:

Denominator data - All patients registered with GP practices (total practice list size).

Source of denominator data - See "Numerator data".

Comments on denominator data - The practice list sizes are supplied to QMAS from the National Health Applications and Infrastructure Services (NHAIS).

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

From 2009 onwards, National Prevalence Day has been moved to 31st March (previously 14th February) so that prevalence is calculated on the same basis as disease registers for indicator denominators.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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13. Low A, Low A. The QOF equity window: an illusion or a different view? *Journal of Public Health*, 2006 28(3): 293-294. Available at http://jpubhealth.oxfordjournals.org/cgi/content/full/28/3/293

Updated: June 2011

Exercise testing / specialist referral for patients with newly diagnosed angina

Purpose:

To help reduce the level of risk to health for NHS patients with angina and ensure high standards of primary health care and treatment delivered to them.

As an additional assessment, patients with newly diagnosed angina should be referred for exercise-testing or myocardial perfusion scanning. The aim of further investigation is to provide diagnostic and prognostic information and to identify patients who may benefit from further intervention.

An alternative to referral for exercise testing is referral to a specialist for evaluation. Referrral would normally be to a cardiologist, general physician or GP with a special interest.

Definition of indicator and its variants:

Proportion of patients with newly diagnosed angina who are referred for exercise testing and/or specialist assessment.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		09I_601PC_10_V1

Numerator:

Numerator data - Patients with newly diagnosed angina (after 1st April 2003) who are referred for exercise testing and/or specialist assessment three months before and up to12 months after a diagnosis is recorded.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the CHD register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- angina diagnosis not recorded;
- angina diagnosis recorded before 1st April 2003;
- registered in the three months before the reference date;
- CHD exception reported in the 15 months before the reference date;
- exception for exercise test reported in the 12 months after diagnosis of angina;
- angina diagnosis recorded in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11

months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
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Updated: June 2011

Blood pressure in patients with coronary heart disease

Purpose:

To help reduce the level of risk to health for NHS patients with coronary heart disease (CHD) and ensure high standards of primary health care and treatment delivered to them.

Epidemiological data indicate that continued hypertension following the onset of CHD increases the risk of an adverse cardiac event and that the reduction of blood pressure (BP) reduces risk. The British Hypertension Society Guidelines propose an optimal BP reading of 140/85 or less (and a pragmatic audit standard of 150/90 or less) for patients with CHD.

Definition of indicator and its variants:

Proportion of patients with CHD, for whom the last blood pressure reading (measured in the previous 15 months) is 150/90 or less.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		09K_603PC_10_V1

Numerator:

Numerator data - Patients on the CHD register, for whom a BP reading measured in the 15 months before the reference date is 150/90 or less.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the CHD register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- BP recording exception reported in the 15 months before the reference date;
- registered in the nine months before the reference date;
- CHD exception reported in the 15 months before the reference date;
- ischaemic heart disease diagnosis recorded in the nine months before the reference date;
- maximal BP therapy recorded in the 15 months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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10. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
11. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf

Updated: June 2011

Cholesterol levels in patients with coronary heart disease

Purpose:

To help reduce the level of risk to health for NHS patients with coronary heart disease (CHD) and ensure high standards of primary health care and treatment delivered to them.

A number of trials have demonstrated that cholesterol lowering reduces relative risk of adverse cardiac events and mortality in CHD patients. According to current recommendations on prevention of CHD in clinical practice patients who have a cholesterol level of greater than five mmol/l should be offered lipid lowering therapy.

Definition of indicator and its variants:

Proportion of patients on the CHD register whose last measured total cholesterol level (measured in last 15 months) is five mmol/l or less.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		09L_604PC_10_V1

Numerator:

Numerator data - Patients on the CHD register whose last total cholesterol level measured in the 15 months before the reference date is five mmol/l or less.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the CHD register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the nine months before the reference date;
- CHD exception reported in the 15 months before the reference date;
- ischaemic heart disease diagnosis recorded in the nine months before the reference date;
- persistent exception from serum cholesterol target reported;
- expiring exception from serum cholesterol target reported in the 15 months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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8. The Health and Social Care Information Centre, *National Quality and Outcomes Framework Statistics for England 2004/05*. Available at: http://www.ic.nhs.uk/webfiles/publications/qof0405/QOF0405_Statistical_Bulletin.pdf
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11. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf

Updated: June 2011

Antiplatelet / anti-coagulant therapy for patients with coronary heart disease

Purpose:

To help reduce the level of risk to health for NHS patients with coronary heart disease (CHD) and ensure high standards of primary health care and treatment delivered to them.

Aspirin should be given routinely and continued for life in all patients with CHD unless there is a contraindication. Clopidogrel is an effective alternative in patients with contraindications to aspirin, or who are intolerant of aspirin. Aspirin should be avoided in patients who are anticoagulated.

Definition of indicator and its variants:

Proportion of patients on the CHD register with a record in the last 15 months that aspirin, an alternative anti-platelet therapy, or an anti-coagulant is being taken, unless contraindications or side-effects are recorded.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		09M_605PC_10_V1

Numerator:

Numerator data - Patients on the CHD register who have a record that aspirin, an alternative anti-platelet therapy, or an anti-coagulant is being taken in the 15 months before the reference date, unless contraindications or side-effects are recorded.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the CHD register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the three months before the reference date;
- CHD exception reported in the 15 months before the reference date;
- ischaemic heart disease diagnosis recorded in the three months before the reference date;
- persistent and expiring salicylate contraindications recorded;
- persistent and expiring warfarin contraindications recorded;
- persistent and expiring clopidogrel contraindications recorded.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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11. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf

Updated: June 2011

Beta blocker therapy for patients with coronary heart disease

Purpose:

To help reduce the level of risk to health for NHS patients with coronary heart disease (CHD) and ensure high standards of primary health care and treatment delivered to them.

Long-term beta blockade remains an effective and well tolerated treatment that reduces mortality and morbidity in patients with angina and patients after myocardial infarction. This trial evidence is generally extrapolated to all patients with CHD.

Recent evidence against the use of beta blockers in hypertension should not be extrapolated to patients with CHD.

Definition of indicator and its variants:

Proportion of patients on the CHD register who are currently treated with a beta blocker, unless contraindications or side-effects are recorded.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		09N_606PC_10_V1

Numerator:

Numerator data - Patients on the CHD register who are currently (measured as a prescription within the six months before the reference date) treated with a beta blocker prescription, unless contraindications or side-effects are recorded.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the CHD register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the three months before the reference date;
- CHD exception reported in the 15 months before the reference date;
- ischaemic heart disease diagnosis recorded in the three months before the reference date;
- persistent beta blocker contraindications recorded;
- expiring beta blocker contraindications recorded in the 15 months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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11. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf

Updated: June 2011

ACE inhibitor therapy for patients with myocardial infarction

Purpose:

To help reduce the level of risk to health for NHS patients with myocardial infarction (MI) and ensure high standards of primary health care and treatment delivered to them.

A number of trials have shown reduced mortality following MI with the use of ACE inhibitors that are also of benefit in reducing adverse coronary events and progression of coronary arteriosclerosis without left ventricular systolic dysfunction. There is evidence that angiotensin II antagonists have a similar effect.

Definition of indicator and its variants:

Proportion of patients with a history of MI who are treated with an ACE inhibitor or angiotensin II antagonist, unless contraindications or side-effects are recorded.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		09O_607PC_10_V1

Numerator:

Numerator data - Patients with a history of MI diagnosed after 1st April 2003 who are currently (measured as a prescription within the 6 months before the reference date) treated with an ACE inhibitor or angiotensin II antagonist, unless contraindications or side-effects are recorded.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients dignosed with MI excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- MI diagnosis recorded before 1st April 2003;
- registered in the three months before the reference date;
- CHD exception reported in the 15 months before the reference date;
- MI diagnosis recorded in the three months before the reference date;
- persistent and expiring ACE inhibitor contraindications recorded;
- persistent and expiring A2 antagonist contraindications recorded.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments, and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
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Updated: June 2011

Vaccination: influenza, for patients with coronary heart disease

Purpose:

To help reduce the level of risk to health for NHS patients with coronary heart disease (CHD) and ensure high standards of primary health care and treatment delivered to them.

The Department of Health and the Joint Committee on Vaccination and Immunisation currently recommend influenza vaccination for patients with CHD.

Definition of indicator and its variants:

Proportion of patients on the CHD register who have had an influenza vaccination administered.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		09P_608PC_10_V1

Numerator:

Numerator data - Patients on the CHD register who have a record of influenza vaccination in the relevant period (in the preceding 1st September to 31st March), unless contraindications or side-effects are recorded.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the CHD register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the three months before the reference date;
- CHD exception reported in the 15 months before the reference date;
- ischaemic heart disease diagnosis recorded in the three months before the reference date;
- persistent influenza vaccination contraindications recorded;
- expiring influenza vaccination contraindications recorded in the 15 months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
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    http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf

Updated: June 2011

Years of life lost due to mortality from coronary heart disease

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from coronary heart disease (ICD-10 I20-I25).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		09S_064CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		09S_064DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from coronary heart disease classified by underlying cause of death (ICD-10 I20-I25), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *The National Service Framework for Coronary Heart Disease: winning the war on heart disease*. London: Department of Health, 2004.
2. Commission for Health Improvement, Audit Commission. *National Service Framework for Coronary Heart Disease Review*. London: Commission for Health Improvement, 2003.
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7. Department of Health. *Chronic Disease Management and self-care*. London: Department of Health, 2002.
8. Department of Health. *Strategic Reviews of Research and Development Coronary Heart Disease*. London: Department of Health, 2002.
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Updated: March 2011

Prevalence: heart failure

Purpose:

To ascertain the prevalence of heart failure from General Practice records and help ensure high standardsof primary health care and treatment delivered to NHS patients.

Heart failure represents the only major cardiovascular disease with increasing prevalence and is responsible for dramatic impairment of quality of life, carries a poor prognosis for patients, and is very costly for the NHS to treat (second only to stroke).

The commonest cause of heart failure is myocardial dysfunction, which is most usually systolic with reduced left ventricular contraction and emptying.

Definition of indicator and its variants:

Proportion of patients on the heart failure register in a GP registered population. Between April 2004 and March 2006, the QOF only included patients who had both coronary heart disease (CHD) and left ventricular dysfunction (LVD). This only represented around half of patients with heart failure. From April 2006, all patients with suspected heart failure should be included in the register.

In previous years, LVD was a subset of CHD, but patients with heart failure as a result of LVD are now also included in heart failure registers whether or not CHD has also been diagnosed.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		09T_655PC_10_V1

Numerator:

Numerator data - Patients registered with GP practices with suspected heart failure.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

Denominator:

Denominator data - All patients registered with GP practices (total practice list size).

Source of denominator data - See "Numerator data".

Comments on denominator data - The practice list sizes are supplied to QMAS from the National Health Applications and Infrastructure Services (NHAIS).

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

From 2009 onwards, National Prevalence Day has been moved to 31st March (previously 14th February) so that prevalence is calculated on the same basis as disease registers for indicator denominators.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf

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8. The Health and Social Care Information Centre, *National Quality and Outcomes Framework Statistics for England 2004/05*. Available at: http://www.ic.nhs.uk/webfiles/publications/qof0405/QOF0405_Statistical_Bulletin.pdf

9. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68

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11. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf

12. Healthcare Commission, Service review. *Long Term Conditions - Heart Failure*. Management summary, 2006. Available at: http://www.healthcarecommission.org.uk/_db/_documents/Heart_failure_management_summary_07.pdf

Updated: June 2011

Prevalence: heart failure confirmed by echocardiogram or specialist assessment

Purpose:

To ascertain the prevalence of heart failure from General Practice records and help ensure high standards of primary health care and treatment delivered to NHS patients.

From April 2006, all patients with suspected heart failure should be investigated and this is expected to involve specialist investigation. Specialists may include GPs having a special clinical interest in heart failure. Many heart failure patients will be diagnosed following specialist referral or during hospital admission and some will also have their diagnosis confirmed by tests such as cardiac scintography or angiography rather than echocardiography. Current guidance requires either echocardiography or specialist assessment for all patients with suspected failure, regardless of presumed aetiology.

Definition of indicator and its variants:

Proportion of patients with a diagnosis of heart failure which has been confirmed by an echocardiogram or by specialist assessment.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		09U_656PC_10_V1

Numerator:

Numerator data - Patients on the heart failure register (diagnosed after 1st April 2006) who have had an echocardiogram or been referred to a specialist up to three months before and within 12 months of being added to the register.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients diagnosed with heart failure excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- heart failure diagnoses recorded before 1st April 2006;
- registered in the three months before the reference date;
- heart failure exception reported in the 15 months before the reference date;
- declined echocardiogram within 12 months of heart failure diagnosis;
- heart failure diagnosis recorded in the three months before the reference date

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11

months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
4. NHS Employers and General Practitioners Committee BMA. *Quality and Outcomes Framework guidance for GMS contract 2008/09*, April 2008. Available at: http://www.nhsemployers.org/SiteCollectionDocuments/QUALITY_OUT_COMPLETE_CD_110209.pdf
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Updated: June 2011

ACE inhibitor therapy for patients with heart failure due to left ventricular dysfunction

Purpose:

To help reduce the level of risk to health for NHS patients with heart failure due to left ventricular dysfunction (LVD) and ensure high standards of primary health care and treatment delivered to them.

In the absence of specific contraindications, all patients with LVD should be considered for treatment with angiotensin converting enzyme (ACE) inhibitors that have been shown to improve survival in patients with all grades of heart failure. There is evidence that ACE inhibitors delay the onset of symptomatic heart failure, reduce cardiovascular events and improve long-term survival. The evidence base for treating patients with LVD heart failure with angiotensin receptor blockers (ARBs) is strong, however this should only be after first attempting to treat with ACE inhibitors.

Definition of indicator and its variants:

Proportion of patients with a diagnosis of heart failure due to LVD who are currently treated with an ACE inhibitor or ARB unless contraindications or side-effects are recorded.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		09V_657PC_10_V1

Numerator:

Numerator data - Patients diagnosed with heart failure who are currently (measured as a prescription within the six months before the reference date) treated with ACE inhibitor or ARB, who can tolerate therapy and for whom there is no contraindication.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients diagnosed with heart failure excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the three months before the reference date;
- heart failure exception reported in the 15 months before the reference date;
- heart failure diagnosis recorded in the three months before the reference date;
- persistent and expiring ACE inhibitor contraindications recorded;
- persistent and expiring ARB contraindications recorded

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11

months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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7. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework or England 2005/06*. Available at: http://www.ic.nhs.uk/webfiles/publications/qof/NationalQualityOutcomesFramework280906_PDF.pdf
8. The Health and Social Care Information Centre, *National Quality and Outcomes Framework Statistics for England 2004/05*. Available at: http://www.ic.nhs.uk/webfiles/publications/qof0405/QOF0405_Statistical_Bulletin.pdf
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10. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
11. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf

Updated: June 2011

ACE inhibitor and beta blocker therapy for patients with heart failure due to left ventricular dysfunction

Purpose:

To help reduce the level of risk to health for NHS patients with heart failure due to left ventricular dysfunction (LVD) and ensure high standards of primary health care and treatment delivered to them.

There is strong evidence base for treating heart failure due to LVD with beta-blockers with a 34% reduction in major endpoints of beta-blockers on top of ACE inhibitors compared to placebo.The belief that beta-blockers are contra-indicated in heart failure was disproved, at least for the licensed beta-blockers. Furthermore, there are no data to suggest excess risk in the elderly and there are no contra-indications for use in people with COPD. However, this strategy is more difficult in clinical practice than initiating ACE (more contra-indications, less tolerated, with a need for slower but more dose titration steps).

Despite the evidence above, initiating beta-blockers in heart failure, or switching from one not licensed for heart failure, is more difficult because of the need to titrate from low doses and small increments over repeated visits. Patients also often suffer a temporary deterioration in symptoms with beta-blocker initiation which needs monitoring

Definition of indicator and its variants:

Proportion of patients with a diagnosis of heart failure due to LVD who are currently treated with an ACE inhibitor or ARB and additionally with a beta-blocker licensed for heart failure unless contraindications or side-effects are recorded.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		09W_677PC_10_V1

Numerator:

Numerator data - Patients diagnosed with heart failure who are currently (measured as a prescription within the six months before the reference date) treated with ACE inhibitor or ARB and who are additionally treated with a beta-blocker licensed for heart failure.

unless contraindications or side-effects are recorded.
Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

This is a new indicator. For more details see 'QOF Changes and New Indicators for 2009/10' available at: http://www.bma.org.uk/images/QOFchanges200910_tcm41-178932.pdf

Denominator:

Denominator data - All patients diagnosed with heart failure excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the three months before the reference date;
- heart failure exception reported in the 15 months before the reference date;
- heart failure diagnosis recorded in the three months before the reference date;
- persistent and expiring beta-blocker contraindications recorded..

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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5. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf
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10. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf

Updated: June 2011

Mortality from hypertensive disease

Purpose:

To reduce deaths from hypertensive disease.

Definition of indicator and its variants:

Mortality from hypertensive disease (ICD-10 I10-I15 equivalent to ICD-9 401-405).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		08A_057NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		08A_057CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		08A_057SM00++_09_V1 08A_057SM0074_09_V1
		All ages, <75			1993-09	08A_057SMT00++_09_V1 08A_057SMT0074_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		08A_057DR00++_09_V1 08A_057DR0074_09_V1
		All ages, <75			1993-09	08A_057DRT00++_09_V1 08A_057DRT0074_09_V1

Numerator:

Numerator data - Deaths from hypertensive disease, classified by underlying cause of death (ICD-10 I10-I15, ICD-9 401-405 adjusted), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males   All Ages: 1.01
Females   All Ages: 1.014

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*

Interpretation of indicators:

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Healthcare Commission. *National Service Framework for Coronary Heart Disease Review*. London: Healthcare Commission, 2005.
2. Department of Health. *New NSF Chapter on Arrhthymias and Sudden Cardiac Death*. London: Department of Health, 2005. Available at: http://www.dh.gov.uk/assetRoot/04/10/52/80/04105280.pdf
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Updated: March 2011

Systolic blood pressure

Purpose:

To reduce mean systolic blood pressure in adults.

Hypertension is one of the most prevalent and powerful contributors to cardiovascular disease (CVD), the most common cause of death in industrialised countries. Elevated levels of both systolic and diastolic blood pressure are associated with an increased risk of CVD events

Definition of indicator and its variants:

Observed and age-standardised mean systolic blood pressure (SBP) of adults.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Mean and age-standardised mean	MFP	16+	E, GOR, ONS area, SHA, CTY	2001-03 2005-07 2006-08	1998 2000-03 2005-08	08B_305VSP1_08_V1 08B_305VSP2_08_V1

Numerator:

Numerator data - Mean systolic blood pressure at the specified ages in a sample survey of the health of the population of England.

Source of numerator data - Health Survey for England (HSE), commissioned by the Department of Health and since April 2005 The Information Centre for health and social care and carried out by the Joint Health Survey Unit of Social and Community Planning Research and of the Department of Epidemiology and Public Health at University College, London.

Comments on numerator data - Mean systolic blood pressure is defined as mean of the second and third systolic pressure readings taken using an automatic sphygmomanometer (Dinamap 8100 device). Means are then averaged over the whole sample of the adult population.

Adults with a valid blood pressure reading were included in the calculations. The nurse protocol required three readings to be taken and valid cases were defined as those for whom all three readings were successfully obtained and who had not eaten, drank alcohol or smoked in the 30 minutes prior to the measurement. The general population sample did not receive a nurse visit in 1999. Hence, three-year averages that include data for 1999 (i.e. 1997-99, 1998-00 and 1999-01) could not be computed.

Denominator:

Denominator data - Respondents aged 16+ in a sample survey of the health of the population of England who had blood pressure measured.

Source of denominator data - See "Numerator data".

Comments on denominator data - The HSE is a series of annual surveys that began in 1991 with the aim of monitoring the health of the population. It was designed to measure health and health related behaviours in adults and children living in private households in England. For each participant, the survey included an interview and a physical examination by a nurse, at which various physical measurements, tests, and samples of blood and saliva were collected. These measurements provided biomedical information about known risk factors associated with disease and objective validation for self-reported health behaviour.

Statistical methods:

The figures have been provided for three-year periods (based on three-year moving averages) and for calendar years. All calculations of sub-national observed estimates at Government Office Region, ONS area, Strategic Health Authority and County levels, age-standardised rates, confidence intervals and significance tests were carried out by the National Centre for Social Research (see Annex 9 for details).

Interpretation of indicators:

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several

organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Craig R and Mindell (eds). *Health Survey for England 2006. Volume 1: Cardiovascular disease and risk factors in adults*. The Information Centre, Leeds, 2008. Available at: http://www.ic.nhs.uk/webfiles/publications/HSE06/HSE%2006%20report%20VOL%201%20v2.pdf
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Updated: November 2010

Diastolic blood pressure

Purpose:

To reduce mean diastolic blood pressure in adults.

Hypertension is one of the most prevalent and powerful contributors to cardiovascular disease (CVD), the most common cause of death in industrialised countries. Elevated levels of both systolic and diastolic blood pressure are associated with an increased risk of CVD events

Definition of indicator and its variants:

Observed and age-standardised mean diastolic blood pressure (DBP) in adults.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Mean and age-standardised mean	MFP	16+	E, GOR, ONS area, SHA, CTY	2001-03 2005-07 2006-08	1998 2000-03 2005-08	08C_306VSP1_08_V1 08C_306VSP2_08_V1

Numerator:

Numerator data - Mean diastolic blood pressure at the specified ages in a sample survey of the health of the population of England.

Source of numerator data - Health Survey for England (HSE), commissioned by the Department of Health and since April 2005 The Information Centre for health and social care and carried out by the Joint Health Survey Unit of Social and Community Planning Research and of the Department of Epidemiology and Public Health at University College, London.

Comments on numerator data - Mean diastolic blood pressure is defined as mean of the second and third diastolic pressure readings taken using an automatic sphygmomanometer (Dinamap 8100 device). Means are then averaged over the whole sample of the adult population.

Adults with a valid blood pressure reading were included in the calculations. The nurse protocol required three readings to be taken and valid cases were defined as those for whom all three readings were successfully obtained and who had not eaten, drank alcohol or smoked in the 30 minutes prior to the measurement. The general population sample did not receive a nurse visit in 1999. Hence, three-year averages that include data for 1999 (i.e. 1997-99, 1998-00 and 1999-01) could not be computed.

Denominator:

Denominator data - Respondents (with a valid blood pressure reading) aged 16+ in a sample survey of the health of the population of England.

Source of denominator data - See "Numerator data".

Comments on denominator data - The HSE is a series of annual surveys that began in 1991 with the aim of monitoring the health of the population. It was designed to measure health and health related behaviours in adults and children living in private households in England. For each participant, the survey included an interview and a physical examination by a nurse, at which various physical measurements, tests, and samples of blood and saliva were collected. These measurements provided biomedical information about known risk factors associated with disease and objective validation for self-reported health behaviour.

Statistical methods:

The figures have been provided for three-year periods (based on three-year moving averages) and for calendar years. All calculations of sub-national observed estimates at Government Office Region, ONS area, Strategic Health Authority and County levels, age-standardised rates, confidence intervals and significance tests were carried out by the National Centre for Social Research (see Annex 9 for details).

Interpretation of indicators:

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several

organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Craig R and Mindell (eds). *Health Survey for England 2006. Volume 1: Cardiovascular disease and risk factors in adults*. The Information Centre, Leeds, 2008. Available at: http://www.ic.nhs.uk/webfiles/publications/HSE06/HSE%2006%20report%20VOL%201%20v2.pdf
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6. Joint Health Survey Unit, Social and Community Planning Research and Department of Epidemiology and Public Health, University College London. *The Health Survey for England*. London: The Stationery Office, 1998.
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Updated: November 2010

High blood pressure

Purpose:

To reduce the prevalence of high blood pressure in adults.

Definition of indicator and its variants:

Observed and age-standardised proportion of adults with high blood pressure. The term "high blood pressure" is used to refer to those who are hypertensive, i.e. with a systolic blood pressure (SBP) equal to or greater than 140 and/or a diastolic blood pressure (DBP) equal to or greater than 90, whether or not currently on any antihypertensive drugs (hypertensive treated and hypertensive untreated). Also included are those with blood pressure readings below the above thresholds, but who are currently on antihypertensive drugs (normotensive treated). The counts include all adults with a valid blood pressure reading (cf. SBP, DBP below) and data on medication specifically prescribed for controlling blood pressure.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number, percent and age-standardised percent	MFP	16+	E, GOR, ONS area, SHA, CTY	2001-03 2005-07 2006-08	1998 2000-03 2005-08	08D_307VSP1_08_V1 08D_307VSP2_08_V1

Numerator:

Numerator data - The number of persons aged 16+ in a sample survey of the health of the population of England with high blood pressure.

Source of numerator data - Health Survey for England (HSE), commissioned by the Department of Health and since April 2005 The Information Centre for health and social care and carried out by the Joint Health Survey Unit of Social and Community Planning Research and of the Department of Epidemiology and Public Health at University College, London

Comments on numerator data - The systolic and diastolic blood pressure thresholds for hypertension were changed in the HSE series in 1998 from 160/95 to 140/90 mmHg in accordance with the latest World Health Organization guidelines. The inclusion of the criterion of the use of prescribed medication for the control of hypertension in the revised HSE definition has meant that it is not possible to calculate high blood pressure prevalence rates for the period before 1998 in a way consistent with the current definition. The definition of hypertension used for clinical purpose talks about 'sustained' levels of high blood pressure, while HSE only measures blood pressure at one point in time. This needs to be taken into account when interpreting the results.

Denominator:

Denominator data - Respondents (with a valid blood pressure reading and data on medication) aged 16+ in a sample survey of the health of the population of England.

Source of denominator data - See "Numerator data".

Comments on denominator data - The HSE is a series of annual surveys that began in 1991 with the aim of monitoring the health of the population. It was designed to measure health and health related behaviours in adults and children living in private households in England. For each participant, the survey included an interview and a physical examination by a nurse, at which various physical measurements, tests, and samples of blood and saliva were collected. These measurements provided biomedical information about known risk factors associated with disease and objective validation for self-reported health behaviour.

Statistical methods:

The figures have been provided for three-year periods (based on three-year moving averages) and for calendar years. All calculations of sub-national observed estimates at Government Office Region, ONS area, Strategic Health Authority and County levels, age-standardised rates, confidence intervals and significance tests were carried out by the National Centre for Social Research (see Annex 9 for details).

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several

organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Craig R and Mindell (eds). *Health Survey for England 2006. Volume 1: Cardiovascular disease and risk factors in adults*. The Information Centre, Leeds, 2008. Available at:
   http://www.ic.nhs.uk/webfiles/publications/HSE06/HSE%2006%20report%20VOL%201%20v2.pdf
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   http://www.dh.gov.uk/assetRoot/04/07/77/31/04077731.pdf
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Updated: November 2010

Treated and controlled high blood pressure

Purpose:

To help reduce the prevalence of high blood pressure in adults through medication and monitor a preventive intervention for stroke.

Definition of indicator and its variants:

Observed and age-standardised proportion of adults on prescribed antihypertensive drugs with a blood pressure reading below systolic (SBP) 140 mmHg and diastolic (DBP) 90 mmHg during the survey. The reference population used for standardisation was the Census 2001 adult (non-institutional) population of England.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number, percent and age-standardised percent	MFP	16+	E, GOR, ONS area, SHA, CTY	2001-03 2005-07 2006-08	1998 2000-03 2005-08	08E_323VSP1_08_V1 08E_323VSP2_08_V1

Numerator:

Numerator data - The number of persons aged 16+ in a sample survey of the health of the population of England with a blood pressure reading <140 and diastolic blood pressure <90 but who are currently taking drugs specifically prescribed for controlling blood pressure (Normotensive treated).

Source of numerator data - Health Survey for England (HSE), commissioned by the Department of Health and since April 2005 The Information Centre for health and social care and carried out by the Joint Health Survey Unit of Social and Community Planning Research and of the Department of Epidemiology and Public Health at University College, London

Comments on numerator data - The systolic and diastolic blood pressure thresholds for hypertension were changed in the HSE series in 1998 from 160/95 to 140/90 mmHg in accordance with the latest World Health Organization guidelines. The inclusion of the criterion of the use of prescribed medication for the control of hypertension in the revised HSE definition has meant that it is not possible to calculate high blood pressure prevalence rates for the period before 1998 in a way consistent with the current definition. The definition of hypertension used for clinical purpose talks about 'sustained' levels of high blood pressure, while HSE only measures blood pressure at one point in time. This needs to be taken into account when interpreting the results.

Denominator:

Denominator data - Respondents (with a valid blood pressure reading and data on antihypertensive medication) aged 16+ in a sample survey of the health of the population of England who included:

- Normotensive treated - taking prescribed drugs for blood pressure and with systolic blood pressure <140 and diastolic blood pressure <90;
- Hypertensive treated - taking prescribed drugs for blood pressure and with either systolic blood pressure >=140 or diastolic blood pressure >=90;
- Hypertensive untreated - not taking prescribed drugs for blood pressure and with either systolic blood pressure >=140 or diastolic blood pressure >=90.

Source of denominator data - See "Numerator data".

Comments on denominator data - The HSE is a series of annual surveys that began in 1991 with the aim of monitoring the health of the population. It was designed to measure health and health related behaviours in adults and children living in private households in England. For each participant, the survey included an interview and a physical examination by a nurse, at which various physical measurements, tests, and samples of blood and saliva were collected. These measurements provided biomedical information about known risk factors associated with disease and objective validation for self-reported health behaviour.

Statistical methods:

The figures have been provided for three-year periods (based on three-year moving averages) and for calendar years. All calculations of sub-national observed estimates at Government Office Region, ONS area, Strategic Health Authority and County levels, age-standardised rates, confidence intervals and significance tests were carried out by the National Centre for Social Research (see Annex 9 for details).

Interpretation of indicators:

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Craig R and Mindell (eds). *Health Survey for England 2006. Volume 1: Cardiovascular disease and risk factors in adults*. The Information Centre, Leeds, 2008. Available at: http://www.ic.nhs.uk/webfiles/publications/HSE06/HSE%2006%20report%20VOL%201%20v2.pdf
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Updated: November 2010

Prevalence: hypertension

Purpose:

To ascertain the prevalence of hypertension from General Practice records and help ensure high standards of primary health care and treatment delivered to NHS patients.

Hypertension is a common medical condition which is largely managed in primary care. Trials of anti-hypertensive treatment have confirmed a significant reduction in the incidence of stroke and coronary heart disease in patients with treated and controlled hypertension.

Definition of indicator and its variants:

Proportion of patients with established hypertension in a GP registered population. The British Hypertension Society recommends that drug therapy should be started in all patients with sustained systolic blood pressures of greater than or equal to 160 mmHg or sustained diastolic blood pressures of greater than or equal to 100 mmHg despite non-pharmacological measures.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		08F_618PC_10_V1

Numerator:

Numerator data - Patients registered with GP practices with a coded diagnosis of established hypertension.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time. A number of patirnts may be wrongly coded in this group, for example patients who have had one-off high blood pressure readings or women who have been hypertensive in pregnancy.

Denominator:

Denominator data - All patients registered with GP practices (total practice list size).

Source of denominator data - See "Numerator data".

Comments on denominator data - The practice list sizes are supplied to QMAS from the National Health Applications and Infrastructure Services (NHAIS).

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Please note that the prevalence data published for this indicator underestimate the level of hypertension morbidity as compared with the findings from the Health Survey for England, a result of using wider range of denominator population. The Health Survey uses as a denominator only those who had blood pressure measurement.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

From 2009 onwards, National Prevalence Day has been moved to 31st March (previously 14th February) so that prevalence is calculated on the same basis as disease registers for indicator denominators.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

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Updated: June 2011

Controlled high blood pressure in patients with hypertension

Purpose:

To help reduce the level of risk to health for NHS patients with hypertension and ensure high standards of primary health care and treatment delivered to them.

The British Hypertension Society Guidelines propose a pragmatic audit standard of a blood pressure reading (BP) of 150/90 mmHg or less for patients with treated hypertension. However, for most patients a target of 140/85 mmHg is recommended.

Definition of indicator and its variants:

Proportion of patients on the hypertension register whose last blood pressure (measured in previous nine months) is 150/90 mmHg or less.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		08H_620PC_10_V1

Numerator:

Numerator data - Patients on the hypertension register, in whose BP reading measured in the nine months before the reference date is 150/90 mmHg or less.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the hypertension register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- BP recording exception reported in the 15 months before the reference date;
- registered in the nine months before the reference date;
- hypertension exception reported in the 15 months before the reference date;
- hypertension diagnosis recorded in the nine months before the reference date;
- maximal BP therapy recorded in the 15 months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
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6. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf
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10. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
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Updated: June 2011

Years of life lost due to mortality from hypertensive disease

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from hypertensive disease (ICD-10 I10-I15).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		08I_065CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		08I_065DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from hypertensive diseaseclassified by underlying cause of death (ICD-10 I10-I15), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

    Annex 2: Changes to Office for National Statistics mortality data
    Annex 3: Explanations of statistical methods used in the *Compendium*
    Annex 5: European Standard Population

Interpretation of indicators:

    Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Healthcare Commission. *National Service Framework for Coronary Heart Disease Review*. London: Healthcare Commission, 2005.
2. Department of Health. *New NSF Chapter on Arrhthymias and Sudden Cardiac Death.* London: Department of Health, 2005. Available at: http://www.dh.gov.uk/assetRoot/04/10/52/80/04105280.pdf
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4. Department of Health. *Delivering Better Heart Services : Progress Report 2003*. London: Department of Health, 2003.
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10. Royal College of Physicians. *Coronary Revascularisation in the management of stable angina pectoris*. London: Royal College of Physicians, 1998.
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12. Birkhead J, Goldacre M, Mason A, Wilkinson E, Amess M, Cleary R (eds). *Health Outcome Indicators: Myocardial Infarction. Report of a working group to the Department of Health.* Oxford: National Centre for Health Outcomes Development, 1999. Available at: http://nchod.uhce.ox.ac.uk/myocardial.pdf
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Updated: March 2011

Cardiovascular risk assessment in patients with hypertension

Purpose:

To help reduce the level of risk to health for NHS patients with hypertension and ensure high standards of primary health care and treatment delivered to them.

Cardiovascular disease (CVD) is the commonest cause of death in the UK, and importantly for patients, the major cause of premature death (before 65). Moreover, of greater significance for the NHS, CVD is now the commonest cause of disability (through stroke and heart failure particularly) and hospital admission. This results in CVD being the major cost driver for health utilisation and remains the end point disease for many other chronic disorders, especially diabetes and renal disease.

To deliver primary prevention of CVD requires that patients at risk are identified before disease has become established and that requires screening.

Definition of indicator and its variants:

Proportion of patients with a new diagnosis of hypertension (excluding those with pre-existing CHD, diabetes, stroke and/or TIA) who have had a face to face cardiovascular risk assessment at the outset of diagnosis using an agreed risk assessment tool.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		08J_682PC_10_V1

Numerator:

Numerator data - Patients with a new diagnosis of hypertension (after 1st April 2009) who have had a face to face cardiovascular risk assessment at the outset of diagnosis using an agreed risk assessment tool.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

This is a new indicator. For more details see 'QOF Changes and New Indicators for 2009/10' available at: http://www.bma.org.uk/images/QOFchanges200910_tcm41-178932.pdf

Denominator:

Denominator data - All patients with a new diagnosis of hypertension excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- CVD risk assessment recorded in the 12 months before the reference date;
- registered in the three months before the reference date;
- CVD exception reported in the 15 months before the reference date;
- hypertension diagnosis recorded in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
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5. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Statistics for England 2007/08*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2007-08/QOF%20200708%20Statistical%20Bulletin.pdf
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7. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework or England 2005/06.* Available at: http://www.ic.nhs.uk/webfiles/publications/qof/NationalQualityOutcomesFramework280906_PDF.pdf
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10. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
11. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf

Updated: June 2011

Lifestyle advice for patients with hypertension

Purpose:

To help reduce the level of risk to health for NHS patients with hypertension and ensure high standards of primary health care and treatment delivered to them.

Cardiovascular disease (CVD) is the commonest cause of death in the UK, and importantly for patients, the major cause of premature death (before 65). Moreover, of greater significance for the NHS, CVD is now the commonest cause of disability (through stroke and heart failure particularly) and hospital admission. This results in CVD being the major cost driver for health utilisation and remains the end point disease for many other chronic disorders, especially diabetes and renal disease.

There is considerable evidence to support the positive impact of increasing physical activity, smoking cessation, reducing unsafe alcohol consumption, and improving diet on cardiovascular health.

Patients with hypertension are at increased risk of developing CVD and this risk can be reduced, not only by treating their hypertension, but by also reducing lifestyle risks.

Definition of indicator and its variants:

Proportion of patients newly diagnosed with hypertension who are given lifestyle advice in the last 15 months for: increasing physical activity, smoking cessation, safe alcohol consumption and healthy diet.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		08K_683PC_10_V1

Numerator:

Numerator data - Patients with a new diagnosis of hypertension (after 1st April 2009) who are given lifestyle advice in the last 15 months for: increasing physical activity, smoking cessation, safe alcohol consumption and healthy diet.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

This is a new indicator. For more details see 'QOF Changes and New Indicators for 2009/10' available at: http://www.bma.org.uk/images/QOFchanges200910_tcm41-178932.pdf

Denominator:

Denominator data - All patients with a new diagnosis of hypertension excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- lifestyle advice recorded in the 15 months before the reference date;
- registered in the three months before the reference date;
- CVD exception reported in the 15 months before the reference date;
- hypertension diagnosis recorded in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
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Updated: June 2011

Mortality from stroke

Purpose:

To reduce deaths from stroke.

Definition of indicator and its variants:

Mortality from stroke (ICD-10 I60-I69, equivalent to ICD-9 430-438).
Mortality from hypertensive disease and stroke for ages 35-64 (ICD-10 I10-I15, I60-I69; equivalent to ICD-9 401-405, 430-438).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		10A_158NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		10A_158CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <65, <75, 35-64# 65-74	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		10A_158SM00++_09_V1 10A_158SM0064_09_V1 10A_158SM0074_09_V1 10A_158SM3564_09_V1 10A_158SM6574_09_V1
		All ages, <65, <75, 65-74			1993-09	10A_158SMT00++_09_V1 10A_158SMT0064_09_V1 10A_158SMT0074_09_V1 10A_158SMT6574_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <65, <75, 35-64# 65-74	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		10A_158DR00++_09_V1 10A_158DR0064_09_V1 10A_158DR0074_09_V1 10A_158DR3564_09_V1 10A_158DR6574_09_V1
		All ages, <65, <75, 65-74			1993-09	10A_158DRT00++_09_V1 10A_158DRT0064_09_V1 10A_158DRT0074_09_V1 10A_158DRT6574_09_V1

\# Hypertensive disease and stroke, ages 35-64

Numerator:

Numerator data - Deaths from stroke, classified by underlying cause of death (ICD-10 I60-I69, ICD-9 430-438 adjusted) and deaths from hypertensive disease and stroke for ages 35-64 only (ICD-10 I60-I69 and I10-I15), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

The directly age-standardised mortality rates from stroke for persons aged under 65 and 65-74 were target indicators in the *Health of the Nation* strategy (see "Further reading").

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying

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the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used for stroke (ICD-10 I60-I69, equivalent to ICD-9 430-438):

Males	0-74yrs: 1.073	75-84yrs: 1.147	85+yrs: 1.176
Females	0-74yrs: 1.046	75-84yrs: 1.097	85+yrs: 1.100

For the specific indicator for the 35-64 years age group the following ICD-10/9 comparability ratios were used for hypertensive disease and stroke (ICD-10 I10-I15, I60-I69; equivalent to ICD-9 401-405, 430-438):

Males	0-74yrs: 1.066
Females	0-74yrs: 1.044

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population
Annex 6: Goals of *Our Healthier Nation*

Interpretation of indicators:

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *National service framework for older people*. London: Department of Health, 2001.
2. Royal College of Physicians. *National Clinical Guidelines for stroke.* London: Royal College of Physicians, 2000.
3. Scottish Intercollegiate Guidelines Network. *Management of patients with stroke. Rehabilitation, Prevention and Management of Complications, and discharge planning. A national Clinical Guideline.* Edinburgh: Scottish Intercollegiate Guidelines Network, 2002.
4. Clinical Resource Efficiency Support Team. *Consensus Guidance on the management of acute stroke.* Belfast: Clinical Resource Efficiency Support Team, 1999. Available at: http://gain-ni.org/Library/Guidelines/acute_stroke.pdf
5. Department of Health. *Saving Lives: Our Healthier Nation*. London: The Stationery Office, 1999.
6. Rudd A, Goldacre M, Amess M, Fletcher J, Wilkinson E, Mason A, Fairfield G, Eastwood A, Cleary R, Coles J (eds). *Health Outcome Indicators: Stroke. Report of a working group to the Department of Health*. Oxford: National Centre for Health Outcomes Development, 1999.
7. Department of Health. *Health of the Nation - A Strategy for Health in England*. London: Her Majesty's Stationery Office, 1992.

Updated: March 2011

Deaths within 30 days of emergency admission to hospital: stroke

Purpose:

Some people with stroke die before they can be admitted to hospital. There are variations in death rates among those who survive long enough to be admitted, and some of these deaths may potentially be preventable. The National Service Framework for older people cites evidence that people who have strokes are more likely to survive if admitted promptly to a hospital-based stroke unit with treatment and care provided by a specialist coordinated stroke team within an integrated service. The National Health Service (NHS) may be helped to prevent some of these deaths by seeing comparative figures and learning lessons from follow-up investigations.

Definition of indicator and its variants:

Deaths in hospital and after discharge between 0 and 29 days (inclusive) of an emergency admission to hospital with a stroke.

Statistic	Sex	Age group	Organisation (see glossary)	Period		File_worksheet Name
				Current data	**Trend data**	
Indirectly age and sex-standardised rate per 100,000 (standardised to 2004/05)	P F M	All Ages	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County; LA (boundaries as at April 2009); PCO (boundaries as at October 2006); deprivation group (5, 7 bands);Trust Cluster; Trust.	FY 2008/09	FY 1999/00, FY 2000/01, FY 2001/02, FY 2002/03, FY 2003/04, FY 2004/05, FY 2005/06, FY 2006/07, FY 2007/08	10B_230ISR3BP_09_V1 10B_230ISR3BF_09_V1 10B_230ISR3BM_09_V1

Numerator:

Numerator data - The number of denominator continuous inpatient (CIP) spells following emergency admission for patients of all ages with a primary diagnosis on admission of stroke (ICD 10 codes I61-I64), where the patient dies in hospital or after discharge between 0-29 days (inclusive) of admission in the respective financial year.

Deaths that occur outside hospital following discharge but between 0-29 days of admission are included. This was achieved through linkage of Hospital Episode Statistics (HES) data with deaths data from the Office for National Statistics (ONS). Records of all deaths which occurred in England during the period of analysis for each indicator plus 30 days after were obtained from ONS. Linkage was undertaken using the most recent CIP denominator spell for each person discharged alive.

The date of admission, and the date and method of discharge from the last episode in the CIP spell (or HES/ONS linked data), are used to determine the interval between admission and death.

The numerator is the number of denominator CIP spells with the following fields and values:

> The last episode in the CIP spell (or HES/ONS linked*) has:
> > DISMETH* = 4 (discharge method);
> > AND DISDATE* minus ADMIDATE (first episode) = 0-29 days inclusive (discharge date and admission date).

> Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
> > SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

> Fields used from the first episode in a spell include:
> > PROCODETC (provider code, unmapped). Provider clusters are aggregates of the PROCODETC field.

Counts are by:
     age / sex / organisation of residence in CIP spell (values for England are aggregates of these)

where:
     age bands are <1, 1-4, 5-9, … , 80-84, 85+;
     sex is 1, 2 (male and female).

Source of numerator data **-** Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year, plus those up to 30 days in the next financial year, England, The NHS Information Centre for health and social care; and the Office for National Statistics.

Comments on numerator data - Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). Admission and death can occur in separate episodes and even in separate hospitals after transfer. A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March.

The indicator includes deaths occurring after transfer to another Trust. For residence based aggregations, deaths are counted to the first valid organisation coded in the spell; for provider based aggregations, (Provider Trusts and Clusters) deaths are counted to the first valid organisation coded in the spell.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details).

Denominator:

Denominator data - The number of finished continuous inpatient spells following an emergency admission for patients of all ages with a primary diagnosis on admission of stroke (ICD 10 codes I61-I64):

- I61.- Intracerebral haemorrhage;
- I62.- Other nontraumatic intracranial haemorrhage;
- I63.- Cerebral infarction;
- I64.- Stroke not specified as haemorrhage or infarction.

The following fields and values are used for the denominator.

The first episode in the CIP spell has:
     DIAG_01 in the valid list for this indicator (primary diagnosis);
     AND EPIORDER = 1 (episode order);
     AND EPITYPE = 1 (episode type);
     AND ADMIMETH = 21, 22, 23, 24 or 28 (admission method);
     AND EPISTART is valid and >= 01/04/YYYY and <= 31/03/YYYY+1 (episode start date);
     AND CLASSPAT = 1 (patient classification);
     AND STARTAGE is either 0-120 or 7001-7007 (age at start of episode);
     AND SEX = 1 or 2 (sex);
     AND EPISTAT = 3 (episode status);
     AND ADMISORC is not 51, 52 or 53 (admission source);
     AND DOB not 01/01/1900 or 01/01/1901 (date of birth).

The last episode in the CIP spell (or HES/ONS linked*) has:
     DISMETH* = 1-4 (discharge method);
     AND DISDATE* is valid (discharge date).

Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
     SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Fields used from the first episode in a spell include:
     PROCODETC (provider code, unmapped). Provider clusters are aggregates of the PROCODETC field.

Counts are by:
     age / sex / organisation of residence in CIP spell (values for England are aggregates of these)

where:
     age bands are <1, 1-4, 5-9, … , 80-84, 85+;
     sex is 1, 2 (male and female).

Source of denominator data - Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year, England, The NHS Information Centre for health and social care.

Comments on denominator data - There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). There may also be variation between hospitals in the way that they code diagnoses to the fourteen diagnosis fields in each episode, particularly primary diagnosis. For instance, they may code in the order in which the diagnoses were made, or according to their perceived importance or complexity. This may affect whether a particular spell is selected for inclusion in this indicator.

Statistical Methods:

The indicator is indirectly standardised by age and sex. The person-based rate is standardised by age and sex using England age and sex rates as standards. The gender-specific rates are standardised by age using person-based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age and sex of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in rates from a previous year, plus the statistical significance of this change, have also been calculated. For all indicators a positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator - This is a condition-specific, cross-sectional annual comparative indicator of outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator - Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation, Local Authority and provider Trust level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence interval overlaps the national rate, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity - A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may contribute to the variation shown by the indicators. Differences in case-mix, severity of the stroke, comorbidities and other potential risk factors also contribute to the variation. The data available do not allow adjustment for any of these factors. This may pose less of a constraint at geographical organisation level than at hospital level. We have tried to deal with this constraint by presenting the data in clusters that are similar with respect to institution or organisation type. Gender-specific data standardised to person rates and analyses at England level by the Index of Multiple Deprivation are presented.

Other potential confounding factors - The patterns of providing care may vary between NHS hospital trusts in terms of: extent of treatment in primary care settings; referral policies and practices; and hospital admission policies and practices. Variation between hospitals in average length of stay may also lead to variation between hospitals in the proportion of deaths occurring in hospital as opposed to in the community after discharge from hospital.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess potentially avoidable factors related to high observed death rates locally are recommended.

Relevant national initiatives:

This indicator is among those recommended by a Working Group on Outcome Indicators for stroke, set up to advise the Department of Health on new indicators. The indicator was part of the NHS Performance Indicators published by the Department of Health up to 2002. A new Stroke Strategy for England was published by the Department of Health in December 2007.

Further reading:

1. Commission on Professional and Hospital Activities. *Hospital Wide Quality Indicators*. Ann Arbor, 1991.
2. Carroll JG. *Monitoring with Indicators: Evaluating the Quality of Patient Care.* Maryland: Aspen Publications, 1992.
3. CRAG Clinical Outcomes Working Group. *Clinical Outcome Indicators.* Edinburgh: The Scottish Office, 1994.
4. Rudd A, Goldacre M, Amess M, Fletcher J, Wilkinson E, Mason A, Fairfield G, Eastwood A, Cleary R, Coles J (eds). *Health Outcome Indicators: Stroke. Report of a working group to the Department of Health*. Oxford: National Centre for Health Outcomes Development, 1999 (www.nchod.nhs.uk).
5. Department of Health. *National Service Framework for older people*. London: Department of Health, 2001.
6. Department of Health. *NHS Performance Indicators: February 2002*. London: Department of Health, 2002.
7. Lakhani A, Coles J, Eayres D, Spence C, Rachet B. *Creative use of existing clinical and health outcomes data to assess NHS performance in England: Part 1—performance indicators closely linked to clinical care. BMJ* 2005;330: 1426-31.
8. Department of Health. *National Stroke Strategy.* London: Department for Health, 2007.

Updated: November 2010

Emergency hospital admissions: stroke

Purpose:

The purpose of the indicator is to help monitor success in the prevention of stroke through, for example, encouraging better diet and more exercise; and the timely detection and treatment of high blood pressure.

Definition of indicator and its variants:

Emergency admissions to hospital of persons with stroke.

Statistic	Sex	Age group	Organisation	Period		File_worksheet name
			(see glossary)	Current data	Trend data	
Indirectly age and sex-standardised rate per 100,000 (standardised to FY 2005/06)	P F M	All Ages	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County, LA (boundaries as at April 2009); PCO (boundaries as at October 2006); CTY.	FY 2008/09	FY 2002/03, FY 2003/04, FY 2004/05, FY 2005/06, FY 2006/07, FY 2007/08	10C_528ISR7CP_09_V1 10C_528ISR7CF_09_V1 10C_528ISR7CM_09_V1

Numerator:

Numerator data - The number of finished and unfinished continuous inpatient (CIP) spells, excluding transfers, for patients with an emergency method of admission and with any of the following primary diagnoses (DIAG_01 in the 1st episode of the spell, ICD 10 codes) in the respective financial year:

- I61.- Intracerebral haemorrhage;
- I62.- Other non-traumatic intracranial haemorrhage;
- I63.- Cerebral infarction;
- I64.- Stroke, not specified as haemorrhage or infarction;

The following fields and values are used for the numerator:

The first episode in the CIP spell has:
DIAG_01 in the valid list for this indicator (primary diagnosis);
AND ADMISORC not = 51, 52 or 53 (admission source);
AND EPITYPE = 1 (episode type);
AND SEX = 1 or 2 (sex);
AND EPIORDER = 1 (episode order);
AND ADMIMETH = 21, 22, 23, 24 or 28 (admission method);
AND EPISTART is >= 01/04/YYYY and EPISTART <= 31/03/YYYY+1 (episode start date);
AND CLASSPAT = 1 (patient classification);
AND STARTAGE is 0-120 or 7001-7007 (age at start of episode);
AND DOB not 01/01/1900 or 01/01/1901 (date of birth).

Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Counts are by:
age / sex / organisation of residence in CIP spell (values for England are aggregates of these)

where:
age bands are <1, 1-4, 5-9, … , 80-84, 85+;
sex is 1, 2 (male and female).

Source of numerator data – Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year. England, The NHS Information Centre for health and social care.

Comments on numerator data – It is important, for the purposes of measuring incidence, to count persons as opposed to episodes of care, as each person with the condition should only be counted once during each admission. This is done by counting CIPS (epiorder 1) only. Some transfers, which are also coded epiorder 1 and emergency could lead to double counting. In order to avoid this, spells which have an ADMISORC of 51-53, indicating a transfer from another NHS Trust, are excluded.

Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March. In order to avoid double counting that spell in both financial years, only spells which started during the financial year of analysis are counted.

Deaths in the community prior to admission are not included, nor are patients who get treated in the community, as data about them are not available.

Emergency hospital admission is a proxy for the incidence of stroke. Some patients with stroke may get treated in the community and will thus be missing from the numerator. New guidelines on the development of dedicated stroke units are expected to lead to an increase in hospital admissions, hence a more complete numerator over time. Deaths in the community prior to admission are not included as data about them are not available.

Emergency method of admission and primary diagnosis are used to distinguish between a new problem and readmission for the same problem previously treated in hospital. However, there could be double counting if the readmission is coded as an emergency and has the same primary diagnosis.

Spells are attributed to the organisation of residence, based on the numerator.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). These show the proportion of diagnoses not coded. There may be variation between hospitals in the way that they code diagnoses to the fourteen diagnosis fields in each episode, particularly primary diagnosis. For instance, they may code in the order in which diagnoses were made, or according to the perceived importance or complexity. This may affect whether a particular spell is selected for inclusion in the numerator of this indicator.

Denominator:

Denominator data - The denominator is the resident population for the respective organisation.

Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 29 September 2008.

For further details on revisions to ONS mid-year population estimates, and their availability, see the comments in the specification for the 'Estimates of resident population' indicator.

Counts are by:
age / sex / organisation of residence (values for England are aggregates of these)

where:
age bands are <1, 1-4, 5-9, … , 80-84, 85+;
sex is 1, 2 (male and female).

Source of denominator data - Office for National Statistics.

Statistical Methods:

The indicator is indirectly standardised by age and sex. The person-based rate is standardised by age and sex using England age and sex rates as standards. The gender-specific rates are standardised by age using person-based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age and sex of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in admission rate from a previous year, plus the statistical significance of this change, have also been calculated. A positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator **-** This is a condition-specific, cross-sectional annual comparative indicator, acting as a proxy for outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator – Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals **-** Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation and Local Authority level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence interval overlaps the national rate, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity **-** A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may determine whether a patient gets admitted or not and may influence rates. Differences in case-mix (beyond that accounted for by standardisation), comorbidities and other potential risk factors also contribute to the variation. Current data do not allow assignment of severity of illness across continuous inpatient spells, nor do they allow adjustment for any of these factors. We have tried to deal with this constraint partially by presenting the data in clusters that are similar with respect to organisation type. Gender-specific data standardised to person rates are available.

Other potential confounding factors **-** There may be variation in the prevalence of risk of stroke between residents of different organisations. In particular, it is known that there are ethnic variations in high blood pressure. The patterns of providing care may vary between organisations in terms of: extent of treatment in primary care settings; referral policies and practices; accessibility of accident and emergency facilities; hospital outpatient facilities / walk-in clinics; and hospital inpatient admission policies and practices.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess the extent to which admissions were potentially avoidable are recommended.

Relevant national initiatives:

Incidence of hospitalised stroke was one of the indicators recommended in a report of a working group on health outcomes to the Department of Health. The National Service Framework for Older People contains standards and guidelines for the prevention and treatment of strokes.

Further reading:

1. Rudd A, Goldacre M, Amess M, Fletcher J, Wilkinson E, Mason A, Fairfield G, Eastwood A, Cleary R, Coles J (eds). Health Outcome Indicators: Stroke. Report of a working group to the Department of Health. Oxford: National Centre for Health Outcomes Development, 1999.
2. Department of Health. National service framework for older people. London: Department of Health, 2001.
3. Lakhani A, Coles J, Eayres D, Spence C, Rachet B. Creative use of existing clinical and health outcomes data to assess NHS performance in England: Part 1—performance indicators closely linked to clinical care. BMJ 2005;330: 1426-31.

Updated: November 2010

Emergency readmissions to hospital within 28 days of discharge: stroke

Purpose:

To help monitor National Health Service (NHS) success in avoiding (or reducing to a minimum) readmission following discharge from hospital, when readmission was not part of the originally planned treatment. Previous analyses have shown that around 8% of patients discharged from NHS hospitals following emergency admission with a stroke are readmitted as an emergency within 28 days. There is wide variation between similar NHS organisations in rates of such emergency readmissions. Not all emergency readmissions are likely to be part of the originally planned treatment, and some may be potentially avoidable. The NHS may be helped to prevent potentially avoidable readmissions by seeing comparative figures and learning lessons from organisations with low readmission rates.

Definition of indicator and its variants:

Percentage of emergency admissions to any hospital in England occurring within 28 days of the last, previous discharge from hospital after emergency admission with a stroke.

Statistic	Sex	Age group	Organisation	Period		File-worksheet Name
			(see glossary)	Current data	Trend data	
Indirectly age and sex-standardised percent (standardised to 2004/05)	P F M	All Ages	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County; LA (boundaries as at April 2009); PCO (boundaries as at October 2006); NHS provider Trusts (as during financial year); provider clusters; deprivation group (5, 7 bands)	FY 2008/09	FY 1999/00, FY 2000/01, FY 2001/02, FY 2002/03, FY 2003/04, FY 2004/05, FY 2005/06, FY 2006/07, FY 2007/08	10D_529ISP4GP_09_V1 10D_529ISP4GF_09_V1 10D_529ISP4GM_09_V1

Numerator:

Numerator data – The number of finished and unfinished continuous inpatient (CIP) spells that are emergency admissions within 0-27 days (inclusive) of the last, previous discharge from hospital (see denominator).

The date of the last, previous discharge from hospital, and the date and method of admission from the following CIP spell, are used to determine the interval between discharge and emergency readmission.

The numerator is based on a pair of spells, the discharge spell and the next subsequent readmission spell (this spell must meet the numerator criteria). The selection process thus carries over the characteristics of the denominator for the discharge spell and applies additional ones to the readmission spell.

The numerator is the number of denominator CIP spells with the following fields and values:

The first episode in readmission CIP spell ADMIDATE minus last episode in admission CIP spell DISDATE < 27 days inclusive (discharge date and admission date, includes negatives);

AND the first episode in the readmission CIP spell has:
ADMIMETH = 21, 22, 23, 24 or 28 (admission method).

Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Fields used from the last episode in a spell include:
PROCODETC (provider code, unmapped). Provider clusters are aggregates of the PROCODETC field.

Counts are by:
     age / sex / organisation of residence in CIP spell (values for England are aggregates of these)

where:
     age bands are <1, 1-4, 5-9, … , 80-84, 85+;
     sex is 1, 2 (male and female).

Source of numerator data – Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year, plus those up to 28 days in the next financial year, England, The NHS Information Centre for health and social care.

Comments on numerator data – Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March

The numerator (readmissions) consists of CIP spells (see denominator) that include both finished and unfinished (i.e. finished episodes from following years) episodes, i.e. readmissions can be finished and unfinished CIP spells. Where there is more than one readmission within 28 days, each readmission is counted once, in relation to the previous discharge.

Readmissions that end in death are included in the numerator.

Spells are attributed to the organisation of residence, based on the numerator.

The indicator includes discharges occurring after transfer to another Trust. For residence based aggregations discharges are counted to the first valid organisation coded in the spell, For provider based aggregations (Provider Trusts and Clusters) discharges are counted to the discharging organisation.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details).

Denominator:

Denominator data - The number of finished CIP spells following an emergency admission with a primary diagnosis on admission of stroke (ICD 10 codes I61-I64), with a discharge date up to March 31st within the year of analysis:

- I61.- Intracerebral haemorrhage
- I62.- Other nontraumatic intracranial haemorrhage
- I63.- Cerebral infarction
- I64.- Stroke not specified as haemorrhage or infarction

Day cases and spells with a discharge coded as death are excluded.

The following fields and values are used for the denominator:

The first episode in the CIP spell has:
     DIAG_01 in the valid list for this indicator (primary diagnosis);
     AND EPITYPE = 1 (episode type);
     AND SEX = 1 or 2 (sex);
     AND EPIORDER = 1 (episode order);
     AND ADMIMETH = 12, 22, 23, 24 or 28 (admission method);
     AND EPISTART is valid (episode start date);
     AND CLASSPAT = 1 (patient classification);
     AND (MAINSPEF NOT BETWEEN '700' AND '715'
         or MAINSPEF is null) (main specialty)
     AND STARTAGE is either 0-120 or 7001-7007 (age at start of episode);
     AND DOB not 01/01/1900 or 01/01/1901 (date of birth).

AND the last episode in the CIP spell has:
     DISDATE is valid and < 31/03/YYYY+1 (discharge date);
     AND DISMETH = 1, 2 or 3 (discharge method).

Fields used from the first episode in a spell where there is a valid organisation of residence code include:
     SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Fields used from the last episode in a spell include:
> PROCODETC (provider code, unmapped). Provider clusters are aggregates of the PROCODETC field.

Counts are by:
> age / sex / organisation of residence in CIP spell (values for England are aggregates of these)

where:
> age bands are <1, 1-4, 5-9, … , 80-84, 85+;
> sex is 1, 2 (male and female).

Source of denominator data **–** Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year, England, The NHS Information Centre for health and social care.

Comments on denominator data **–** There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). Quality of coding shows the proportion of diagnoses not coded. There may also be variation between hospitals in the way that they code diagnoses to the fourteen diagnosis fields in each episode, particularly primary diagnosis. For instance, they may code in the order in which the diagnoses were made, or according to their perceived importance or complexity. This may affect whether a particular spell is selected for inclusion in this indicator.

The denominator consists of CIP spells that cover all continuous, consultant episodes for the same patient, including those following a transfer to another hospital. Denominator CIP spells must start with an admission episode and finish with a (live) discharge episode in the year of analysis.

CIP spells with a discharge code of death are excluded from the denominator because readmission is not possible.

Statistical Methods:

The indicator is indirectly standardised by age and sex. The person-based rate is standardised by using England age and sex rates as standards. The gender-specific rates are standardised using person-based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age and sex of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in rates from a previous year, plus the statistical significance of this change, have also been calculated. A positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator **-** This is a condition-specific, cross-sectional annual comparative indicator, acting as a proxy for outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator - Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals **-** Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation, Local Authority and provider Trust level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence interval overlaps the national rate, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity **-** A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may contribute to the variation shown by the indicators.

Differences in case-mix (beyond that accounted for by standardisation), severity of the stroke, comorbidities and other potential risk factors also contribute to the variation. Current data do not allow assignment of severity of illness across continuous inpatient spells, nor do they allow adjustment for any of these factors. This may pose less of a constraint at geographical organisation level than at hospital level. We have tried to deal with this constraint by presenting the data in clusters that are similar with respect to institution or organisation type. No attempt has been made to assess whether the readmission was linked to the discharge in terms of diagnosis. A patient discharged after a stroke may be readmitted into a community hospital with a chest infection. There are many different possibilities and over-specifying may lead to readmissions being missed. Gender-specific data standardised to person rates are available. Analyses at England level by the Index of Multiple Deprivation are presented.

Other potential confounding factors - A continuous inpatient spell may include transfers to other hospitals, e.g. for rehabilitation. The patterns of providing care may vary between NHS hospital trusts in terms of whether patients are transferred elsewhere for rehabilitation and convalescence before final discharge. Planned transfers, for example for rehabilitation, may extend length of stay and affect discharge destination figures and readmission rates.

Variation between hospitals in average length of stay may lead to variation between hospitals in the proportion of complications occurring in hospital as opposed to in the community after discharge from hospital. Readmissions may reflect self-discharge against medical advice, and levels of primary care and community resources available to manage care outside hospital. Readmissions may not be linked clinically to the previous spell and may be entirely appropriate for the clinical care of the patient. There may be variation between Trusts in the way emergency admissions are coded. Routine data do not allow for all of these aspects to be identified and removed from the indicator, however, this may be done through local audit.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess the extent to which readmissions were linked to the previous episode, and therefore truly represent potentially avoidable adverse events, are recommended.

Relevant national initiatives:

This indicator is among those recommended by a Working Group on Outcome Indicators for stroke, set up to advise the Department of Health on new indicators. The indicator has been used by the Department of Health in NHS Performance Indicators 2002, and by the Commission for Health Improvement in NHS Performance Ratings 2003. The National Service Framework for Older People contains standards and guidelines for the treatment of strokes.

Further reading:

1. CRAG Clinical Outcomes Working Group. *Clinical Outcome Indicators*. Edinburgh: The Scottish Office, 1994.
2. Department of Health. *National Service Framework for older people*. London: Department of Health, 2001.
3. Department of Health. *NHS Performance Indicators: 2002.* London: Department of Health, 2002.
4. Healthcare Commission. 2005 performance ratings: July 2005 website *http://ratings2005.healthcarecommission.org.uk/*. London: Healthcare Commission, 2005.
5. Lakhani A, Coles J, Eayres D, Spence C, Rachet B. Creative use of existing clinical and health outcomes data to assess NHS performance in England: Part 1—performance indicators closely linked to clinical care. *BMJ* 2005;330: 1426-31.
6. Rudd A, Goldacre M, Amess M, Fletcher J, Wilkinson E, Mason A, Fairfield G, Eastwood A, Cleary R, Cole J (eds). *Health Outcome Indicators: Stroke. Report of a working group to the Department of Health*. Oxford: National Centre for Health Outcomes Development, 1999.

Updated: November 2010

Returning to usual place of residence following hospital treatment: stroke

Purpose:

In the absence of routine data on patient levels of function and well-being, a return to usual residence following a stroke may act as a proxy for successful outcome of rehabilitation. The category of accommodation as coded in Hospital Episode Statistics (HES) is used as a proxy for place of residence. Although the proportion of those who return to pre-stroke category of accommodation will depend partly on the availability of support at home and the quality of community services, a change in the category of accommodation may suggest an important change in functional ability and health status. There are variations between 'like' populations in the proportions who return to usual residence. The National Health Service (NHS) may be able to avoid unnecessarily prolonged hospital stay by learning lessons from the experience of others and alerting those with responsibility for social care about problems.

The 56 day cut-off point was selected for consistency with a similar indicator developed for use in Scotland.

Definition of indicator and its variants:

Proportion of patients of all ages discharged back to usual place of residence within 56 days of emergency admission to hospital with a stroke.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Indirectly age and sex-standardised percent (standardised to FY 2004/05)	P F M	All Ages	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County; LA (boundaries as at April 2009); PCO (boundaries as at October 2006); NHS provider Trusts (as during financial year); provider clusters; deprivation group (5, 7 bands)	FY 2008/09	FY 1999/00, FY 2000/01, FY 2001/02, FY 2002/03, FY 2003/04, FY 2004/05, FY 2005/06, FY 2006/07, FY 2007/08	10E_250ISP5P_09_V1 10E_250ISP5F_09_V1 10E_250ISP5M_09_V1

Numerator:

Numerator data - The number of denominator continuous inpatient (CIP) spells i.e. spells following emergency admission for patients of all ages with a primary diagnosis on admission of stroke (ICD 10 codes I61-I64) where the patient is discharged to a specified category of accommodation between 0 and 55 days (inclusive) of admission.

The date and source of admission from the first episode in the CIP spell; and the date, method and destination of discharge from the last episode in the CIP spell; are used to determine the interval between admission and discharge, and whether the patient was discharged to the usual place of residence at the end of the CIP spell.

The numerator is the number of denominator CIP spells with the following fields and values:

The last episode in CIP spell has:
DISMETH = 1-3 (discharge method);
AND Last episode in CIP spell DISDATE minus first episode in CIP spell EPISTART = 0-55 days inclusive (discharge date and episode start date);
AND there is a match between first episode in CIP spell ADMISORC and last episode in CIP spell DISDEST as follows (admission source and discharge destination):
(DISDEST="19")
Or (ADMISORC="29" And DISDEST="29")
Or (ADMISORC="30" And DISDEST="30")
Or ((ADMISORC="37" Or ADMISORC="38" Or ADMISORC="39") And (DISDEST="37" Or DISDEST="38" Or DISDEST="39"))
Or (ADMISORC="48" And DISDEST="48")

Or (ADMISORC="50" And DISDEST="50")
Or (ADMISORC="54" And DISDEST="54")
Or ((ADMISORC="65" Or ADMISORC="66" Or ADMISORC="69") And (<DISDEST="65"
Or DISDEST="66" Or DISDEST="69"))
Or (ADMISORC="84" And DISDEST="84")
Or (ADMISORC="85" And DISDEST="85")
Or (ADMISORC="86" And DISDEST="86")
Or (ADMISORC="88" And DISDEST="88")
Or (ADMISORC="89" And DISDEST="89")
Or (ADMISORC="89" And (DISDEST="85" Or DISDEST="86" Or DISDEST="88"))
Or ((ADMISORC="85" Or ADMISORC="86" Or ADMISORC="88") And DISDEST = "89").

Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence code include:
SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Fields used from the first episode in a spell include:
PROCODETC (provider code, unmapped). Provider clusters are aggregates of the PROCODETC field.

Counts are by:
age / sex / organisation of residence in CIP spell (values for England are aggregates of these)

where:
age bands are <1, 1-4, 5-9, … , 80-84, 85+;
sex is 1, 2 (male and female).

Source of numerator data - Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year, plus those up to 30 days in the next financial year, England, The NHS Information Centre for health and social care.

Comments on numerator data - Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April or May may contain admission information from an episode which started during the previous March.

The indicator includes discharges occurring after transfer to another Trust. Discharges are counted to the first valid organisation coded in the spell.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details).

Denominator:

Denominator data - The number of finished CIP spells following an emergency admission within the respective financial year for patients of all ages with a primary diagnosis on admission of stroke (ICD 10 codes I61-I64), excluding spells ending in death within 0-2 days (inclusive) of admission. The denominator also excludes CIP spells where the first episode in the spell has an admission source coded other than specified (see below).

Stroke:
- I61.- Intracerebral haemorrhage;
- I62.- Other nontraumatic intracranial haemorrhage;
- I63.- Cerebral infarction;
- I64.- Stroke not specified as haemorrhage or infarction.

The following fields and values are used for the denominator.

The first episode in the CIP spell has:
DIAG_01 in the valid list for this indicator (primary diagnosis);
AND ADMISORC = 19, 29, 39, 54, 65, 66, 69, 84, 85, 86, 88 or 89 up to the end of the 98/99
financial year, and = 19, 29, 30, 37, 38, 39, 48, 50, 54, 65, 66, 69, 84, 85, 86, 88 or 89 afterwards
(admission source);
AND EPITYPE = 1 (episode type);
AND SEX = 1 or 2 (sex);
AND EPIORDER = 1 (episode order);
AND ADMIMETH = 21, 22, 23, 24 or 28 (admission method);
AND EPISTART is valid and between 01/04/YYYY and 31/05/YYYY+1 (episode start date);

AND CLASSPAT = 1 (patient classification);
AND STARTAGE is either 0-120 or 7001-7007 (age at start of episode);
AND EPISTAT = 3 (episode status);
AND DOB not 01/01/1900 or 01/01/1901 (date of birth).

AND the last episode in the CIP spell has:
DISDATE is valid (discharge date);
AND DISMETH = 1, 2, 3 or 4 (discharge method).

Additionally, the following exclusion is applied (discharge date, admission date and discharge method):
AND NOT (last episode in CIP spell DISDATE minus first episode in CIP spell ADMIDATE = 0-2
AND last episode in CIP spell DISMETH = 4).

Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Fields used from the first episode in a spell include:
PROCODETC (provider code, unmapped). Provider clusters are aggregates of the PROCODETC field.

Counts are by:
age / sex / organisation of residence in CIP spell (values for England are aggregates of these)

where:
age bands are <1, 1-4, 5-9, … , 80-84, 85+;
sex is 1, 2 (male and female).

Source of denominator data - Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year, England, The NHS Information Centre for health and social care.

Comments on denominator data - Deaths within 3 days of admission are excluded from the denominator as a proxy for those unlikely to be discharged home due to the severity of the condition.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). These show the proportion of diagnoses not coded. There may also be variation between hospitals in the way that they code diagnoses to the fourteen diagnosis fields in each episode, particularly primary diagnosis. For instance, they may code in the order in which the diagnoses were made, or according to their perceived importance or complexity. This may affect whether a particular spell is selected for inclusion in the numerator of this indicator.

Statistical methods:

The indicator is indirectly standardised by age and sex. The person-based rate is standardised by age and sex using England age and sex rates as standards. The gender-specific rates are standardised by age using person-based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age and sex of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in rates from a previous year, plus the statistical significance of this change, have also been calculated. A positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator - This is a condition specific, cross-sectional annual comparative indicator, acting as a proxy for outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator - Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations)

and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation, Local Authority and provider Trust level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence interval overlaps the national rate, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity - A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may contribute to the variation shown by the indicators. Differences in case-mix, severity of the stroke, comorbidities and other potential risk factors also contribute to the variation. Current data do not allow assignment of severity of illness across continuous inpatient spells, nor do they allow adjustment for any of these factors. This may pose less of a constraint at geographical organisational level than at hospital level. We have tried to deal with this constraint by presenting the data in clusters that are similar with respect to institution or organisation type. Gender-specific data standardised to person rates as well as analyses at England level by the Index of Multiple Deprivation are presented.

Other potential confounding factors - A continuous inpatient spell may include transfers to other hospitals for rehabilitation. The patterns of providing care may vary between NHS hospital Trusts in terms of whether patients are transferred elsewhere for rehabilitation and convalescence before final discharge. Planned transfers, for example for rehabilitation, may extend length of stay and affect discharge destination figures.

Levels of primary, social and community care and family support may have implications for the ability of a hospital to discharge patients. The indicator may help to highlight such constraints and thereby reduce unnecessarily prolonged hospital stay. Some patients may not be ready for discharge within 8 weeks, needing further rehabilitation. The data in the indicator could be supplemented, at local level, with data on levels of function, disability, handicap etc.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess the reasons for any observed local prolonged stay are recommended.

Relevant national initiatives:

This indicator was part of the NHS Performance Indicators published by the Department of Health up to 2002. The National Service Framework for Older People contains standards and guidelines for the prevention and treatment of strokes. A new Stroke Strategy for England was published by the Department of Health in December 2007.

Further reading:

1. CRAG Clinical Outcomes Working Group. *Clinical Outcome Indicators.* Edinburgh: The Scottish Office, 1994.
2. Rudd A, Goldacre M, Amess M, Fletcher J, Wilkinson E, Mason A, Fairfield G, Eastwood A, Cleary R, Cole J (eds). *Health Outcome Indicators: Stroke. Report of a working group to the Department of Health.* Oxford: National Centre for Health Outcomes Development, 1999 (www.nchod.nhs.uk).
3. Department of Health. *National service framework for older people.* London: Department of Health, 2001.
4. Department of Health. *NHS Performance Indicators: 2002.* London: Department of Health, 2002.
5. Lakhani A, Coles J, Eayres D, Spence C, Rachet B. Creative use of existing clinical and health outcomes data to assess NHS performance in England: Part 1—performance indicators closely linked to clinical care. *BMJ* 2005;330: 1426-31.
   Department of Health. *National Stroke Strategy.* London: Department for Health, 2007.

Updated: November 2010

Prevalence: stroke or transient ischaemic attacks

Purpose:

To ascertain the prevalence of stroke or transient ischaemic attacks (TIA) from General Practice records and help ensure high standards of primary health care and treatment delivered to NHS patients.

Stroke is the third most common cause of death in the developed world. One quarter of stroke deaths occur under the age of 65. There is evidence that timely and appropriate diagnosis and management can improve outcomes. Patients surviving a stroke are likely to need ongoing, long-term treatment and care.

Definition of indicator and its variants:

Proportion of patients who have ever had a stroke or TIA, in a GP registered population.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		10F_611PC_10_V1

Numerator:

Numerator data - Patients registered with GP practices with a coded diagnosis of stroke or TIA.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

Denominator:

Denominator data - All patients registered with GP practices (total practice list size).

Source of denominator data - See "Numerator data".

Comments on denominator data - The practice list sizes are supplied to QMAS from the National Health Applications and Infrastructure Services (NHAIS).

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

From 2009 onwards, National Prevalence Day has been moved to 31st March (previously 14th February) so that prevalence is calculated on the same basis as disease registers for indicator denominators.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf

2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf

3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf

4. NHS Employers and General Practitioners Committee BMA. *Quality and Outcomes Framework guidance for GMS contract 2008/09*, April 2008. Available at: http://www.nhsemployers.org/SiteCollectionDocuments/QUALITY_OUT_COMPLETE_CD_110209.pdf

5. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Statistics for England 2007/08*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2007-08/QOF%20200708%20Statistical%20Bulletin.pdf

6. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07.* Available at: http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf

7. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework or England 2005/06.* Available at: http://www.ic.nhs.uk/webfiles/publications/qof/NationalQualityOutcomesFramework280906_PDF.pdf

8. The Health and Social Care Information Centre, *National Quality and Outcomes Framework Statistics for England 2004/05*. Available at: http://www.ic.nhs.uk/webfiles/publications/qof0405/QOF0405_Statistical_Bulletin.pdf

9. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68

10. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf

11. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf

12. Department of Health, Vascular Programme, Clinical Programme Directorate. *Improving Stroke Services: a guide for commissioners*, 2006. Available at: www.library.nhs.uk/SpecialistLibrarySearch/Download.aspx?resID=260384

Updated: June 2011

Referral of patients with stroke for further investigation

Purpose:

To help reduce the level of risk to health for NHS patients with stroke / transient ischaemic attacks (TIA) and ensure high standards of primary health care and treatment delivered to them.

Further assessment of patients with acute cerebrovascular events may include CT or MRI brain scanning for the following reasons:
- specific treatment of intracranial haemorrhage may be indicated if rapidly diagnosed;
- there is conclusive evidence for the efficacy of antiplatelet therapy and anticoagulant agents in the secondary prevention of ischaemic stroke, but these drugs should be avoided in cases of haemorrhagic stroke;
- clinical scoring systems have been found to be unreliable in distinguishing ischaemic and haemorrhagic stroke.

Definition of indicator and its variants:

Proportion of new patients with presumptive stroke or TIA who have been referred for further investigation. This indicator replaces the original stroke indicator which suggested that patients needed to be referred for confirmation of the diagnosis by CT or MRI scan. However specialist investigations are often only accessible by referral to secondary care services and therefore this indicator has been changed to reflect referral activity rather than confirmation by specific scanning investigations.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		10G_612PC_10_V1

Numerator:

Numerator data - Patients on the stroke or TIA register (diagnosed after 1st April 2008) who have been referred for further investigation up to three months before and within 12 months of being added to the register.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

There have been some definitional changes in 2008/09 which have affected the data for this indicator. There is now a requirement to refer all patients with stroke or TIA within one month of diagnosis. For more details see 'Changes to Quality and Outcomes Framework for 2008' available at: http://www.nhsemployers.org/SiteCollectionDocuments/27_3_08_Proposed_Changes_to_Quality_and_Outcomes_Framework_for_2008__FINAL_CD_110209.pdf

Denominator:

Denominator data - All patients diagnosed with stroke or TIA excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- stroke diagnosis recorded before 1st April 2008;
- registered in the three months before the reference date;
- stroke exception reported in the 15 months before the reference date;
- CT / MRI declined in the 12 months after diagnosis of stroke;
- stroke diagnosis recorded in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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Updated: June 2011

Blood pressure in patients with stroke or transient ischaemic attack

Purpose:

To help reduce the level of risk to health for NHS patients with stroke / transient ischaemic attacks (TIA) and ensure high standards of primary health care and treatment delivered to them.

All stroke patients should have their blood pressure (BP) checked and hypertension persisting for over one month should be treated. The British Hypertension Society Guidelines propose a pragmatic audit standard of a BP reading of 150/90 mmHg or less.

Definition of indicator and its variants:

Proportion of patients with a history of stroke or TIA in whose last BP reading (measured in the previous 15 months) is 150/90 mmHg or less.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		10I_614PC_10_V1

Numerator:

Numerator data - Patients on the stroke or TIA register, in whose last BP reading measured in the 15 months before the reference date is 150/90 mmHg or less.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the stroke or TIA register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- BP recording exception reported in the 15 months before the reference date;
- registered in the nine months before the reference date;
- stroke exception reported in the 15 months before the reference date;
- stroke or TIA diagnosis recorded in the nine months before the reference date;
- maximal BP therapy recorded in the 15 months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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Updated: June 2011

Cholesterol levels in patients with stroke or transient ischaemic attack

Purpose:

To help reduce the level of risk to health for NHS patients with stroke / transient ischaemic attacks (TIA) and ensure high standards of primary health care and treatment delivered to them.

There is evidence of benefit in reducing cholesterol levels of patients with schaemic stroke and TIA. The issue around potential harm in haemorrhagic stroke is more controversial. Given that the vast majority of strokes and TIAs are ischaemic in origin, it is proposed that this indicator is a useful measure. Patients with confirmed haemorrhagic stroke could be exception reported.

Definition of indicator and its variants:

Proportion of patients with a history of stroke or TIA whose last measured total cholesterol level (measured in the previous 15 months) is five mmol/l or less.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		10J_615PC_10_V1

Numerator:

Numerator data - Patients on the stroke or TIA register whose last total cholesterol level measured in the 15 months before the reference date is five mmol/l or less.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the stroke or TIA register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the nine months before the reference date;
- stroke exception reported in the 15 months before the reference date;
- stroke or TIA diagnosis recorded in the nine months before the reference date;
- persistent exception from serum cholesterol target reported;
- expiring exception from the serum cholesterol target reported in the 15 months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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Updated: June 2011

Antiplatelet / anti-coagulant therapy for patients with stroke or transient ischaemic attack

Purpose:

To help reduce the level of risk to health for NHS patients with stroke / transient ischaemic attacks (TIA) and ensure high standards of primary health care and treatment delivered to them.

Long-term antiplatelet therapy reduces the risk of serious vascular events following a stroke by about a quarter. Antiplatelet therapy, normally aspirin, should be prescribed for the secondary prevention of recurrent stroke and other adverse vascular events in patients who have sustained an ischaemic cerebrovascular event.

Definition of indicator and its variants:

Proportion of patients with a stroke shown to be non-haemorrhagic, or a history of TIA, who have a record that an anti-platelet agent (aspirin, clopidogrel, dipyridamole or a combination), or an anti-coagulant is being taken, unless contraindications or side-effects are recorded.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		10K_616PC_10_V1

Numerator:

Numerator data - Patients diagnosed with non-haemorrhagis stroke or TIA , who have a record that an anti-platelet agent or an anti-coagulant is being taken in the 15 months before the reference date, unless contraindications or side-effects are recorded.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the stroke or TIA register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- non-haemorrhagic stroke or TIA diagnosis not recorded;
- registered in the three months before the reference date;
- stroke exception reported in the 15 months before the reference date;
- non-haemorrhagic stroke or TIA diagnosis recorded in the three months before the reference date;
- persistent and expiring salicylate contraindications recorded;
- persistent and expiring warfarin contraindications recorded;
- persistent and expiring clopidogrel contraindications recorded.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11

months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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10. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
11. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf
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Updated: June 2011

Vaccination: influenza, for patients with stroke or transient ischaemic attack

Purpose:

To help reduce the level of risk to health for NHS patients with stroke / transient ischaemic attacks (TIA) and ensure high standards of primary health care and treatment delivered to them.

The Department of Health and the Joint Committee on Vaccination and Immunisation currently recommend influenza vaccination for patients with stroke or TIA.

Definition of indicator and its variants:

The percentage of patients with a history of stroke or TIA who have had an influenza vaccination administered.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		10L_617PC_10_V1

Numerator:

Numerator data - Patients on the troke or TIA register who have a record of influenza vaccination in the relevant period (in the preceding 1st September to 31st March), unless contraindications or side-effects are recorded.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the stroke or TIA register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the three months before the reference date;
- stroke exception reported in the 15 months before the reference date;
- stroke or TIA diagnosis recorded in the three months before the reference date;
- persistent influenza vaccination contraindications recorded;
- expiring influenza vaccination contraindication recorded in the 15 months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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8. The Health and Social Care Information Centre, *National Quality and Outcomes Framework Statistics for England 2004/05*. Available at: http://www.ic.nhs.uk/webfiles/publications/qof0405/QOF0405_Statistical_Bulletin.pdf
9. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68
10. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
11. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf
12. Department of Health, Vascular Programme, Clinical Programme Directorate. *Improving Stroke Services: a guide for commissioners*, 2006. Available at: www.library.nhs.uk/SpecialistLibrarySearch/Download.aspx?resID=260384

Updated: June 2011

Years of life lost due to mortality from stroke

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from stroke (ICD-10 I60-I69).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		10M_066CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		10M_066DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from stroke classified by underlying cause of death (ICD-10 A00 I60-I69), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *National service framework for older people*. London: Department of Health, 2001.
2. Royal College of Physicians. *National Clinical Guidelines for stroke.* London: Royal College of Physicians, 2000.
3. Scottish Intercollegiate Guidelines Network. *Management of patients with stroke. Rehabilitation, Prevention and Management of Complications, and discharge planning*. *A national Clinical Guideline.* Edinburgh: Scottish Intercollegiate Guidelines Network, 2002.
4. Clinical Resource Efficiency Support Team. *Consensus Guidance on the management of acute stroke.* Belfast: Clinical Resource Efficiency Support Team, 1999. Available at: http://gain-ni.org/Library/Guidelines/acute_stroke.pdf
5. Department of Health. *Saving Lives: Our Healthier Nation*. London: The Stationery Office, 1999.
6. Rudd A, Goldacre M, Amess M, Fletcher J, Wilkinson E, Mason A, Fairfield G, Eastwood A, Cleary R, Coles J (eds). *Health Outcome Indicators: Stroke. Report of a working group to the Department of Health*. Oxford: National Centre for Health Outcomes Development, 1999.
7. Department of Health. *Health of the Nation - A Strategy for Health in England*. London: Her Majesty's Stationery Office, 1992.

Updated: March 2011

Prevalence: atrial fibrillation

Purpose:

To ascertain the prevalence of atrial fibrillation from General Practice records and help ensure high standards of primary health care and treatment delivered to NHS patients.

Atrial fibrillation is common, and an important cause of morbidity and mortality. The age specific prevalence of atrial fibrillation is rising, presumably due to improved survival of people with coronary heart disease. Atrial fibrillation is associated with a five fold increase in risk of stroke.

Definition of indicator and its variants:

Proportion of patients with atrial fibrillation in a GP registered population. The atrial fibrillation register include all patients with: an initial event; paroxysmal (intermittent); persistent and permanent atrial fibrillation.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		39A_658PC_10_V1

Numerator:

Numerator data - Patients registered with GP practices with a coded diagnosis of atrial fibrillation.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

Denominator:

Denominator data - All patients registered with GP practices (total practice list size).

Source of denominator data - See "Numerator data".

Comments on denominator data - The practice list sizes are supplied to QMAS from the National Health Applications and Infrastructure Services (NHAIS).

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

From 2009 onwards, National Prevalence Day has been moved to 31st March (previously 14th February) so that prevalence is calculated on the same basis as disease registers for indicator denominators.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
4. NHS Employers and General Practitioners Committee BMA. *Quality and Outcomes Framework guidance for GMS contract 2008/09*, April 2008. Available at: http://www.nhsemployers.org/SiteCollectionDocuments/QUALITY_OUT_COMPLETE_CD_110209.pdf
5. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Statistics for England 2007/08.* Available at: http://www.ic.nhs.uk/webfiles/QOF/2007-08/QOF%20200708%20Statistical%20Bulletin.pdf
6. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07.* Available at: http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf
7. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68
8. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
9. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf
10. Scottish Intercollegiate Guidelines Network, *Cardiac arrhythmias in coronary heart disease*, A national clinical guideline, 2007. Available at: http://www.sign.ac.uk/pdf/sign94.pdf

Updated: June 2011

Prevalence: atrial fibrillation confirmed by ECG or specialist

Purpose:

To ascertain the prevalence of atrial fibrillation from General Practice records and help ensure high standards of primary health care and treatment delivered to NHS patients.

Atrial fibrillation was historically too often inaccurately coded. Patients with an irregular pulse have been given an atrial fibrillation code even though the accuracy of atrial fibrillation diagnosed in this way is only approximately 30 per cent. The introduction of this indicator will enable the compilation of a more accurate register and help to ensure that treatments are targeted more appropriately.

Definition of indicator and its variants:

Proportion of patients with atrial fibrillation with ECG or specialist confirmed diagnosis

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		39B_659PC_10_V1

Numerator:

Numerator data - Patients on the atrial fibrillation register (diagnosed after 1st April 2008) who have had an ECG or been diagnosed by a specialist within or up to three months of being added to the register.

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Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

There have been some definitional changes in 2008/09 which have affected the data for this indicator. The reference date for ECG investigation has been moved to the date of new diagnosis from 1st April 2008. For more details see 'Changes to Quality and Outcomes Framework for 2008' available at:
http://www.nhsemployers.org/SiteCollectionDocuments/27_3_08_Proposed_Changes_to_Quality_and_Outcomes_Framework_for_2008__FINAL_CD_110209.pdf

Denominator:

Denominator data - All patients on the atrial fibrillation register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- atrial fibrillation diagnosis recorded before 1st April 2008;
- registered in the three months before the reference date;
- atrial fibrillation exception reported in the 15 months before the reference date;
- atrial fibrillation diagnosis recorded in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11

months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
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5. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Statistics for England 2007/08*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2007-08/QOF%20200708%20Statistical%20Bulletin.pdf
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Updated: June 2011

Antiplatelet / anti-coagulant therapy for patients with atrial fibrillation

Purpose:

To help reduce the level of risk to health for NHS patients with atrial fibrillation and ensure high standards of primary health care and treatment delivered to them.

For the purposes of the QOF, acceptable anti-coagulation agents are warfarin and phenindione, acceptable anti-platelet agents are asprin, clopidogrel and dipyridamole.

Anti-coagualtion or anti-platelet therapy would not necessarily be indicated if the episode of atrial fibrillation was an isolated event that was not expected to re-occur.

Definition of indicator and its variants:

Proportion of patients with atrial fibrillation who are currently treated with anti-coagulation or anti-platelet drug therapy unless contraindications or side-effects are recorded.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		39C_660PC_10_V1

Numerator:

Numerator data - Patients diagnosed with atrial fibrillation whose records show they have been prescribed anti-coagulant or anti-platelet drug therapy in the previous six months.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the atrial fibrillation register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the three months before the reference date;
- atrial fibrillation exception reported in the 15 months before the reference date;
- atrial fibrillation diagnosis recorded in the three months before the reference date;
- persistent and expiring salicylate contraindications recorded;
- persistent and expiring warfarin contraindications recorded;
- persistent and expiring clopidogrel contraindications recorded;
- persistent and expiring dipyridamole contraindications recorded. .

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11

months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
4. NHS Employers and General Practitioners Committee BMA. *Quality and Outcomes Framework guidance for GMS contract 2008/09*, April 2008. Available at: http://www.nhsemployers.org/SiteCollectionDocuments/QUALITY_OUT_COMPLETE_CD_110209.pdf
5. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Statistics for England 2007/08*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2007-08/QOF%20200708%20Statistical%20Bulletin.pdf
6. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07.* Available at: http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf
7. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68
8. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
9. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf
10. Scottish Intercollegiate Guidelines Network, *Cardiac arrhythmias in coronary heart disease*, A national clinical guideline, 2007. Available at: http://www.sign.ac.uk/pdf/sign94.pdf

Updated: June 2011

Mortality from chronic liver disease including cirrhosis

Purpose:

To reduce deaths from chronic liver disease, including cirrhosis.

Definition of indicator and its variants:

Mortality from chronic liver disease, including cirrhosis (ICD-10 K70, K73-K74 equivalent to ICD-9 571).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		25A_043NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		25A_043CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		25A_043SM00++_09_V1 25A_043SM0074_09_V1
		All ages			1993-09	25A_043SMT00++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		25A_043DR00++_09_V1 25A_043DR0074_09_V1
		All ages			1993-09	25A_043DRT00++_09_V1

Numerator:

Numerator data - Deaths from chronic liver disease, including cirrhosis, classified by underlying cause of death (ICD-10 K70, K73-K74, ICD-9 571 adjusted), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males   All Ages: 1
Females   All Ages: 1.03

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*

Interpretation of indicators:

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Edwards, Griffith. *Alcohol policy: securing a positive impact on health.* Copenhagen: World Health Organization, 2001.
2. Rehn N. *Alcohol in the European Region – consumption, harm and policies.* Copenhagen: World Health Organization, 2001.

Updated: March 2011

Years of life lost due to mortality from chronic liver disease including cirrhosis

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from chronic liver disease including cirrhosis (ICD-10 K70, K73-K74).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		25B_067CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		25B_067DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from chronic liver disease including cirrhosis classified by underlying cause of death (ICD-10 K70, K73-K74), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Edwards, Griffith. *Alcohol policy: securing a positive impact on health.* Copenhagen: World Health Organization, 2001.
2. Rehn N. *Alcohol in the European Region – consumption, harm and policies.* Copenhagen: World Health Organization, 2001.

Updated: March 2011

Mortality from chronic renal failure

Purpose:

To reduce deaths from chronic renal failure.

Indicator currently under review. This indicator may be more a measure of poor certification than cause of death.

Definition of indicator and its variants:

Mortality from chronic renal failure (ICD-10 N18 equivalent to ICD-9 585).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		26A_045NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		26A_045CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		26A_045SM00++_09_V1 26A_045SM0074_09_V1
		All ages			1993-09	26A_045SMT00++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		26A_045DR00++_09_V1 26A_045DR0074_09_V1
		All ages			1993-09	26A_045DRT00++_09_V1

Numerator:

Numerator data - Deaths from chronic renal failure, classified by underlying cause of death (ICD-10 N18, ICD-9 585 adjusted), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males   All Ages: 1.081
Females   All Ages: 1.079

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*

Interpretation of indicators:

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Updated: March 2011

Years of life lost due to mortality from chronic renal failure

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from chronic renal failure (ICD-10 N18).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		26B_068CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		26B_068DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from chronic renal failure classified by underlying cause of death (ICD-10 N18), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Updated: March 2011

Prevalence: chronic kidney disease

Purpose:

To ascertain the prevalence of chronic kidney disease (CKD) from General Practice records and help ensure high standards of primary health care and treatment delivered to NHS patients.

CKD is a long-term condition. It may be progressive and its prevalence increases with age, male sex and South Asian and African Caribbean ethnicity. People of South Asian origin are particularly at risk of CKD-linked diabetes whereas of African and African Caribbean origin have an increased risk of CKD linked to hypertension.

Early identification of CKD is important as it allows appropriate measures to be taken not only to slow or prevent the progression to more serious CKD but also to combat the major risk of illness or death due to cardiovascular disease.

Definition of indicator and its variants:

Proportion of patients aged 18 and over with CKD in a GP registered population. This QOF indicator requires a register of patients with stages 3 to 5 of the disease, based on their estimated Glomerular Filtration rate (eGFR).

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	18+	E, GOR, SHA, PCO	FY 2009/10		26C_661PC_10_V1

Numerator:

Numerator data - Patients registered with GP practices with a coded diagnosis of CKD (US National Kidney Foundation: Stage 3 to 5 CKD).

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

Denominator:

Denominator data - All patients aged 18 and over registered with GP practices (estimated age-banded practice list size).

Source of denominator data - See "Numerator data".

Comments on denominator data - Age-banded practice list sizes were obtained from the Prescription Services Division (RxS) of the NHS Business Services Authority.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

From 2009 onwards, National Prevalence Day has been moved to 31st March (previously 14th February) so that prevalence is calculated on the same basis as disease registers for indicator denominators.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
4. NHS Employers and General Practitioners Committee BMA. *Quality and Outcomes Framework guidance for GMS contract 2008/09*, April 2008. Available at: http://www.nhsemployers.org/SiteCollectionDocuments/QUALITY_OUT_COMPLETE_CD_110209.pdf
5. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Statistics for England 2007/08*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2007-08/QOF%20200708%20Statistical%20Bulletin.pdf
6. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07.* Available at: http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf
7. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68
8. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
9. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf
10. Chronic Kidney Disease in Adults: UK Guidelines for Identification, Management and Referral. Renal Association, 2005.Available at: http://www.renal.org/CKDguide/full/UKCKDfull.pdf

Updated: June 2011

Normal blood pressure in patients with chronic kidney disease

Purpose:

To help reduce the level of risk to health for NHS patients with chronic kidney disease (CKD) and ensure high standards of primary health care and treatment delivered to them.

Studies show that reducing blood pressure in people with CKD reduces the deterioration of their kidney function whether or not they have hypertension or diabetes. The lower the blood pressure achieved the better for the patient care; 140/85 mmHg is taken as a pragmatic starting point.

Definition of indicator and its variants:

Proportion of patients with CKD whose last blood pressure reading (measured in the previous 15 months) is 140/85 mmHg or less.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	18+	E, GOR, SHA, PCO	FY 2009/10		26D_662PC_10_V1

Numerator:

Numerator data - Patients on the CKD register, whose last BP reading measured in the 15 months before the reference date is 145/85 mmHg or less.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the CKD register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- BP recording exception reported in the 15 months before the reference date;
- registered in the nine months before the reference date;
- CKD exception reported in the 15 months before the reference date;
- CKD diagnosis recorded in the nine months before the reference date;
- maximal BP therapy recorded in the 15 months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
4. NHS Employers and General Practitioners Committee BMA. *Quality and Outcomes Framework guidance for GMS contract 2008/09*, April 2008. Available at: http://www.nhsemployers.org/SiteCollectionDocuments/QUALITY_OUT_COMPLETE_CD_110209.pdf
5. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Statistics for England 2007/08*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2007-08/QOF%20200708%20Statistical%20Bulletin.pdf
6. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07.* Available at: http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf
7. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68
8. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
9. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf
10. Chronic Kidney Disease in Adults: UK Guidelines for Identification, Management and Referral. Renal Association, 2005.Available at: http://www.renal.org/CKDguide/full/UKCKDfull.pdf

Updated: June 2011

ACE inhibitor / ARB therapy for chronic kidney disease patients with hypertension and proteinuria

Purpose:

To help reduce the level of risk to health for NHS patients with chronic kidney disease (CKD) and ensure high standards of primary health care and treatment delivered to them.

Angiotensin converting enzyme (ACE) inhibitors and angiotensin receptor blockers (ARBs) are generally more effective than other anti-hypertensives in minimising deterioration in kidney function and this effect is most marked where there is significant proteinuria. Such treatment is both clinically and cost effective.

Definition of indicator and its variants:

Proportion of CKD patients with hypertension and proteinuria who are treated with ACE-I or ARB (unless contraindications or side-effects are recorded).

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	18+	E, GOR, SHA, PCO	FY 2009/10		26E_663PC_10_V1

Numerator:

Numerator data - Patients on the CKD register with hypertension and proteinuria whose records show they have been prescribed ACE-I or ARB in the previous six months.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

There have been some definitional changes in 2008/09 which have affected the data for this indicator. The definition now includes proteinuria. For more details see 'Changes to Quality and Outcomes Framework for 2008' available at:
http://www.nhsemployers.org/SiteCollectionDocuments/27_3_08_Proposed_Changes_to_Quality_and_Outcomes_Framework_for_2008__FINAL_CD_110209.pdf

Denominator:

Denominator data - All patients dignosed with CKD excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- no hypertension diagnosed or hypertension resolved;
- registered in the three months before the reference date;
- CKD exception reported in the 15 months before the reference date;
- CKD diagnosis recorded in the three months before the reference date;
- persistent and expiring ACE inhibitor contraindications recorded;
- persistent and expiring ARB contraindications recorded.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator

to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments, and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
4. NHS Employers and General Practitioners Committee BMA. *Quality and Outcomes Framework guidance for GMS contract 2008/09*, April 2008. Available at: http://www.nhsemployers.org/SiteCollectionDocuments/QUALITY_OUT_COMPLETE_CD_110209.pdf
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10. Chronic Kidney Disease in Adults: UK Guidelines for Identification, Management and Referral. Renal Association, 2005.Available at: http://www.renal.org/CKDguide/full/UKCKDfull.pdf

Updated: June 2011

Kidney function testing in patients with chronic kidney disease

Purpose:

To help reduce the level of risk to health for NHS patients with chronic kidney disease (CKD) and ensure high standards of primary health care and treatment delivered to them.

Quantitative measurement of proteinuria will enable appropriate management of patients with CKD. There is good observational evidence linking proteinuria to adverse outcome.

Definition of indicator and its variants:

Proportion of patients with CKD who have a record of a urine albumin: creatinine ratio (ACR) or protein: creatinine ratio (PCR) testing in the previous 15 months.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	18+	E, GOR, SHA, PCO	FY 2009/10		26F_678PC_10_V1

Numerator:

Numerator data - Patients on the CKD register, with a record of an ACR or a PCR testing conducted in the 15 months before the reference date.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

This is a new indicator. For more details see 'QOF Changes and New Indicators for 2009/10' available at: http://www.bma.org.uk/images/QOFchanges200910_tcm41-178932.pdf

Denominator:

Denominator data - All patients on the CKD register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the three months before the reference date;
- CKD exception reported in the 15 months before the reference date;
- CKD diagnosis recorded in the three months before the reference date;

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
4. NHS Employers and General Practitioners Committee BMA. *Quality and Outcomes Framework guidance for GMS contract 2008/09*, April 2008. Available at: http://www.nhsemployers.org/SiteCollectionDocuments/QUALITY_OUT_COMPLETE_CD_110209.pdf
5. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Statistics for England 2007/08*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2007-08/QOF%20200708%20Statistical%20Bulletin.pdf
6. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07.* Available at: http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf
7. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68
8. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
9. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf
10. Chronic Kidney Disease in Adults: UK Guidelines for Identification, Management and Referral. Renal Association, 2005.Available at: http://www.renal.org/CKDguide/full/UKCKDfull.pdf

Updated: June 2011

Emergency hospital admissions: diabetic ketoacidosis and coma

Purpose:

Diabetic ketoacidosis and coma are rare but serious complications of diabetes that are potentially preventable through better management of diabetes. Patients are usually treated in hospital and thus hospital statistics may be used to monitor incidence. The purpose of the indicator is to help monitor National Health Service (NHS) success in the treatment of patients with diabetes and, in particular, the prevention of ketoacidosis and coma through, for example, encouraging better diet and exercise; improving self-monitoring and diabetes control; and better support for patients and carers in the management of the illness in the home (providing actual support as well as facilitating access to health advice and therapy through NHS Direct and enhanced primary care).

Definition of indicator and its variants:

Emergency hospital admissions of patients presenting with diabetic ketoacidosis and coma.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Indirectly age and sex-standardised rate per 100,000 (standardised to FY 2005/06)	P F M	All Ages	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County; LA (boundaries as at April 2009); PCO (boundaries as at October 2006); CTY.	FY 2008/09	FY 2002/03, FY 2003/04, FY 2004/05, FY 2005/06, FY 2006/07, FY 2007/08	27A_059ISR7PP_09_V1 27A_059ISR7PF_09_V1 27A_059ISR7PM_09_V1

Numerator:

Numerator data - The number of finished and unfinished continuous inpatient (CIP) spells for patients of all ages with an emergency admission and any of the following primary diagnoses (ICD-10 codes) in the respective financial year:

- E10.0 Insulin-dependent diabetes mellitus with coma;
- E10.1 Insulin-dependent diabetes mellitus with ketoacidosis;
- E11.0 Non-insulin dependent diabetes mellitus with coma;
- E11.1 Non-insulin dependent diabetes mellitus with ketoacidosis;
- E12.0 Malnutrition-related diabetes mellitus with coma;
- E12.1 Malnutrition-related diabetes mellitus with ketoacidosis;
- E13.0 Other specified diabetes mellitus with coma;
- E13.1 Other specified diabetes mellitus with ketoacidosis;
- E14.0 Unspecified diabetes mellitus with coma;
- E14.1 Unspecified diabetes mellitus with ketoacidosis.

The following fields and values are used for the numerator:

The first episode in the CIP spell has:
DIAG-01 in the valid list for this indicator (primary diagnosis);
AND ADMISORC not = 51, 52 or 53 (admission source);
AND EPITYPE = 1 (episode type);
AND SEX = 1 or 2 (sex);
AND EPIORDER = 1 (episode order);
AND ADMIMETH = 21,22,23,24 or 28 (admission method);
AND EPISTART >= 01/04/YYYY and EPISTART <= 31/03/YYYY+1 (episode start date within year);
AND CLASSPAT = 1 (patient classification);
AND STARTAGE is either 0-120 or 7001-7007 (age at start of episode);
AND DOB not 01/01/1900 or 01/01/1901 (date of birth).

Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Counts are by:
    age / sex / first valid organisation of residence in CIP spell (values for England are aggregates of these)

where:
    age bands are <1, 1-4, 5-9, … , 80-84, 85+;
    sex is 1, 2 (male and female).

Source of numerator data - Hospital Episode Statistics (HES) for the respective financial year, England, The NHS Information Centre for health and social care.

Comments on numerator data - It is important, for the purposes of measuring incidence, to count persons as opposed to episodes of care, as each person with the condition should only be counted once during each admission. This is done by counting CIP spells (epiorder 1) only. Some transfers, which are also coded epiorder 1 and emergency, could lead to double counting. In order to avoid this, spells which have an ADMISORC of 51-53, indicating a transfer from another NHS Trust, are excluded.

Individual finished and unfinished consultant episodes are linked within a financial year to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March. In order to avoid double counting that spell in both financial years, only spells which started during the financial year of analysis are counted.

Deaths in the community prior to admission are not included, nor are patients who get treated in the community, as data about them are not available.

Emergency method of admission and primary diagnosis are used to distinguish between a new problem and readmission for the same problem previously treated in hospital. However, there could be double counting if the readmission is coded as an emergency and has the same primary diagnosis.

Spells are attributed to the organisation of residence, based on the numerator.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). These show the proportion of diagnoses not coded. There may also be variation between hospitals in the way that they code diagnoses to the fourteen diagnosis fields in each episode, particularly primary diagnosis. For instance, they may code in the order in which the diagnoses were made, or according to their perceived importance or complexity. This may affect whether a particular spell is selected for inclusion in the numerator of this indicator.

Denominator:

Denominator data - The denominator is the resident population for the respective organisation.

Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at September 2009.

For further details on revisions to ONS mid-year population estimates, and their availability, see the comments in the specification for the 'Estimates of resident population' indicator.

Counts are by:
    age / sex / organisation of residence (values for England are aggregates of these)

where:
    age bands are <1, 1-4, 5-9, … , 80-84, 85+;
    sex is 1, 2 (male and female).

Source of denominator data - Office for National Statistics.

Comments on denominator data - Ideally, the denominator should include only patients in the community with diabetes. In the absence of routine data on such patients, the total resident population is used as a denominator.

Statistical methods:

The indicator is indirectly standardised by age and sex. The person-based rate is standardised by age and sex using England age and sex rates as standards. The gender-specific rates are standardised by age using person-based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age and sex of its patients.

This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in admission rate from a previous year, plus the statistical significance of this change, have also been calculated. A positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator - This is a condition-specific, cross-sectional annual comparative indicator, acting as a proxy for outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable institutions/areas.

Quality of Indicator - Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation and Local Authority level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence interval overlaps the national rate, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity - A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may determine whether a patient gets admitted or not and may influence rates. Differences in case-mix, concurrent illnesses and other potential risk factors also contribute to the variation. Gender-specific data standardised to person rates are available. Morbidity from diabetes complications is three-and-a-half times higher amongst the poorest people in England than amongst the richest. Analyses at England level by the Index of Multiple Deprivation are under way.

Other potential confounding factors - There may be variation in the prevalence of diabetes between residents of different organisations. In particular, it is known that Type 2 diabetes is up to six times more common in people of South Asian descent and up to three times more common amongst those of African and Afro-Caribbean origin. Despite this, the indicator is still of value, as these are potentially preventable complications, irrespective of the prevalence of diabetes. The patterns of providing care may vary between organisations in terms of: extent of treatment in primary care settings; referral policies and practices; accessibility of accident and emergency facilities; hospital outpatient facilities / walk – in clinics; and hospital inpatient admission policies and practices.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess the extent to which admissions were potentially avoidable are recommended.

Relevant national initiatives:

The Diabetes National Service Framework and its subsequent Delivery Strategy set out the first ever set of national standards for the treatment of diabetes in order to raise the quality of NHS services and reduce unacceptable variations between them.

Further reading:

1. McColl A J, Gulliford M C. *Population Health Outcome Indicators for the NHS – A Feasibility Study.* London: Faculty of Public Health Medicine, 1993.
2. Home P, Coles J, Goldacre M, Mason A, Wilkinson E (eds). *Health Outcome Indicators: Diabetes. Report of a working group to the Department of Health.* Oxford: National Centre for Health Outcomes Development, 1999. Available at: http://nchod.uhce.ox.ac.uk/diabetes.pdf

3. Department of Health. *National service framework for diabetes: standards.* London: Department of Health, 2001.
4. Department of Health. *Improving Diabetes Services – The NSF Two Years On.* London: Department of Health, 2005.

Updated: November 2010

Hospital procedures: lower limb amputations in diabetic patients

Purpose:

Excluding accidents, diabetes is the biggest cause of lower limb amputation in England, a late complication that is potentially preventable through better management of diabetes. The purpose of the indicator is to help monitor National Health Service (NHS) success in the treatment of patients with diabetes and, in particular, the prevention of lower limb amputation through, for example, encouraging better diet and exercise; improving self-monitoring and diabetes control; and better support for patients and carers in the management of the illness in the home (providing actual support as well as facilitating access to health advice and therapy through NHS Direct and enhanced primary care).

Definition of indicator and its variants:

Admissions to hospital of patients with diabetes where a lower limb amputation is undertaken.

Statistic	Sex	Age group	Organisation	Period		File_worksheet name
			(see glossary)	Current data	Trend data	
Indirectly age and sex-standardised rate per 100,000 (standardised to FY 2005/06)	P F M	All Ages	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County; LA (boundaries as at April 2009); PCO (boundaries as at October 2006); CTY.	FY 2008/09	FY 2002/03, FY 2003/04, FY 2004/05, FY 2005/06, FY 2006/07, FY 2007/08	27B_060ISR7OP_09_V1 27B_060ISR7OF_09_V1 27B_060ISR7OM_09_V1

Numerator:

Numerator data - The number of finished and unfinished continuous inpatient (CIP) spells, excluding transfers, for patients of all ages with a diagnosis of diabetes (ICD-10 codes E10-E14) anywhere in the spell **and** at least one procedure for lower limb amputation anywhere in the spell, in the respective financial year.

Diabetes (ICD10 codes):

- E10.- Insulin-dependent diabetes mellitus;
- E11.- Non-insulin-dependent diabetes mellitus;
- E12.- Malnutrition-related diabetes mellitus;
- E13.- Other specified diabetes mellitus;
- E14.- Unspecified diabetes mellitus.

Amputations (OPCS4 codes):

- X09.- Amputation of leg;
- X10.- Amputation of foot;
- X11.- Amputation of toe.

The following fields and values are used for the numerator:

Any episode in the CIPS has:
A valid diagnosis from the above list in any position (DIAG_NN);
AND a valid procedure from the above list in any position (OPER_NN).

AND the first episode in the CIP spell has:

ADMISORC not = 51, 52 or 53 (admission source);
AND EPITYPE = 1 or 2 (episode type);
AND SEX = 1 or 2 (sex);
AND EPIORDER = 1 (episode order);
AND ADMIMETH = 11,12,13,21,22,23,24,28,31,32,81,82,83,84 or 89 (admission method);
AND EPISTART >= 01/04/YYYY and EPISTART <= 31/03/YYYY+1 (episode start date within year);
AND CLASSPAT = 1, 2 or 5 (patient classification);
AND STARTAGE is either 0-120 or 7001-7007 (age at start of episode);
AND DOB not 01/01/1900 or 01/01/1901 (date of birth).

Fields used from the first episode in a spell where there is a valid organisation of residence code include: SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Counts are by:
    age / sex / organisation of residence in CIP spell (values for England are aggregates of these)

where:
    age bands are <1, 1-4, 5-9, … , 80-84, 85+;
    sex is 1, 2 (male and female).

Source of numerator data - Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year. England, The NHS Information Centre for health and social care.

Comments on numerator data - It is important, for the purposes of measuring incidence, to count persons as opposed to episodes of care, as each person with the condition should only be counted once during each admission. This is done by counting CIPS (epiorder 1) only. Some transfers, which are also coded epiorder 1 could lead to double counting. In order to avoid this, spells which have an ADMISORC of 51-53, indicating a transfer from another NHS Trust, are excluded.

Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March. In order to avoid double counting that spell in both financial years, only spells which started during the financial year of analysis are counted.

Deaths in the community prior to admission are not included, nor are patients who get treated in the community, as data about them are not available.

Spells are attributed to the organisation of residence, based on the numerator.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). These show the proportion of diagnoses not coded. There may be variation between hospitals in the way that they code diagnoses to the fourteen diagnosis fields in each episode, particularly primary diagnosis. For instance, they may code in the order in which diagnoses were made, or according to the perceived importance or complexity. This may affect whether a particular spell is selected for inclusion in the numerator of this indicator. If diabetes, even when it exists, is not recorded as a diagnosis at all, the spell will not be counted. Individual spells may contain more than one eligible procedure but are only counted once. Alternatively, a single person may have a second eligible spell (for a second amputation) within the same year. Separate spells for an individual during the same year are counted separately in the numerator.

Denominator:

Denominator data - The denominator is the resident population for the respective organisation.

Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at September 2009.

For further details on revisions to ONS mid-year population estimates, and their availability, see the comments in the specification for the 'Estimates of resident population' indicator.

Counts are by:
    age / sex / organisation of residence (values for England are aggregates of these)

where:
    age bands are <1, 1-4, 5-9, … , 80-84, 85+,
    sex is 1, 2 (male and female)

Source of denominator data – Office for National Statistics.

Comments on denominator data - Ideally, the denominator should include only patients in the community with diabetes. In the absence of routine data on such patients, the total resident population is used as a denominator.

Statistical methods:

The indicator is indirectly standardised by age and sex. The person-based rate is standardised by age and sex using England age and sex rates as standards. The gender-specific rates are standardised by age using person-

based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age and sex of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in rate from a previous year, plus the statistical significance of this change, have also been calculated. A positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator - This is a condition-specific, cross-sectional annual comparative indicator, acting as a proxy for outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator – Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation and Local Authority level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence intervals for the two rates overlap, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity - A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may determine whether a patient gets admitted or not and may influence rates. Differences in case-mix (beyond that accounted for by standardisation), comorbidities and other potential risk factors also contribute to the variation. Current data do not allow assignment of severity of illness across continuous inpatient spells, nor do they allow adjustment for any of these factors. We have tried to deal with this constraint partially by presenting the data in clusters that are similar with respect to organisation type. Gender-specific data standardised to person rates are available.

Other potential confounding factors - There may be variation in the prevalence of diabetes between residents of different organisations. In particular, it is known that Type 2 diabetes is up to six times more common in people of South Asian descent and up to three times more common amongst those of African and Afro-Caribbean origin. Despite this, the indicator is still of value, as this is a potentially preventable complication, irrespective of the prevalence of diabetes. There is a time lag in the development of this late complication of diabetes, and variation between organisations may reflect varying time lags and treatment elsewhere some time previously. The patterns of providing care may vary between organisations in terms of: extent of treatment in primary care settings; referral policies and practices; accessibility of accident and emergency facilities; hospital outpatient facilities / walk-in clinics; and hospital inpatient admission policies and practices.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess the extent to which admissions were potentially avoidable are recommended.

Relevant national initiatives:

The Diabetes National Service Framework and its subsequent Delivery Strategy set out the first ever set of national standards for the treatment of diabetes in order to raise the quality of NHS services and reduce unacceptable variations between them.

Further reading:

1. McColl A J, Gulliford M C. *Population Health Outcome Indicators for the NHS – A Feasibility Study*. London: Faculty of Public Health Medicine, 1993.
2. Home P, Coles J, Goldacre M, Mason A, Wilkinson E (eds). *Health Outcome Indicators: Diabetes. Report of a working group to the Department of Health*. Oxford: National Centre for Health Outcomes Development, 1999.
3. Department of Health. *National service framework for diabetes: standards*. London: Department of Health, 2001.
4. Department of Health. *Improving Diabetes Services – The NSF Two Years On*. London: Department of Health, 2005.

Updated: November 2010

Mortality from diabetes

Purpose:

To reduce deaths from diabetes.

Definition of indicator and its variants:

Mortality from diabetes (ICD-10 E10-E14 equivalent to ICD-9 250).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		27C_061NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		27C_061CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <75, 1-44	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		27C_061SM00++_09_V1 27C_061SM0074_09_V1 27C_061SM0144_09_V1
		All ages			1993-09	27C_061SMT00++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <75, 1-44	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		27C_061DR00++_09_V1 27C_061DR0074_09_V1 27C_061DR0144_09_V1
		All ages			1993-09	27C_061DRT00++_09_V1

Numerator:

Numerator data - Deaths from diabetes, classified by underlying cause of death (ICD-10 E10-E14, ICD-9 250 adjusted), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

There is significant under-recording of diabetes as an underlying cause of death, because deaths in diabetic people are often coded to the secondary complications associated with diabetes. This effect is less marked at younger ages, hence data are also given for ages 1-44. Even at these ages there is likely to be some under-reporting, which could vary between regions and over time.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males   All Ages: 1.044
Females   All Ages: 1.042

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *National Service Framework for Diabetes – Delivery Strategy.* London: Department of Health, 2002. Available at: http://www.dh.gov.uk/assetRoot/04/03/28/23/04032823.pdf
2. Bajekal M, Becher H, Boreham R, Brookes M. *Health Survey for England - The Health of Minority Ethnic Groups '99*. London: The Stationery Office, 2001.
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6. Department of Health. *Health Survey for England - Cardiovascular Disease*. London: The Stationery Office, 1998.
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Updated: March 2011

Prevalence: diabetes mellitus

Purpose:

To ascertain the prevalence of diabetes mellitus from General Practice records and help ensure high standards of primary health care and treatment delivered to NHS patients.

Diabetes mellitus is one of the common endocrine diseases affecting all age groups, with more than one million people in the UK having the condition. Effective control and monitoring can reduce mortality and morbidity. Much of the management and monitoring of diabetic patients, particularly with Type II diabetes is undertaken by the general practitioner and members of the primary care team.

Some patients treated for diabetes do not in fact have the disease. A systematic approach to the diagnosis of diabetes is encouraged as a prerequisite of planned systematic care for patients with diabetes.

The set of indicators relates to both Type I and Type II diabetes.

Definition of indicator and its variants:

Proportion of patients with diabetes mellitus in a GP registered population.

Since April 2006, diabetes is defined by narrower range of codes specific to Type I or Type II. The QOF rules exclude patients aged less than 17 years and those with gestational (pregnancy) diabetes.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	17+	E, GOR, SHA, PCO	FY 2009/10		27D_621PC_10_V1

Numerator:

Numerator data - Patients registered with GP practices with a coded diagnosis of diabetes mellitus which states whether the patient has Type I or Type II diabetes.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

Denominator:

Denominator data - All patients aged 17 and over registered with GP practices (estimated age-banded practice list size).

Source of denominator data - See "Numerator data".

Comments on denominator data - Age-banded practice list sizes were obtained from the Prescription Services Division (RxS) of the NHS Business Services Authority.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool.

It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

From 2009 onwards, National Prevalence Day has been moved to 31st March (previously 14th February) so that prevalence is calculated on the same basis as disease registers for indicator denominators.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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8. The Health and Social Care Information Centre, *National Quality and Outcomes Framework Statistics for England 2004/05*. Available at: http://www.ic.nhs.uk/webfiles/publications/qof0405/QOF0405_Statistical_Bulletin.pdf
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10. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
11. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf
12. Sigfrid L, Turner C, Crook D, Ray S. Using the UK primary care Quality and Outcomes Framework to audit health care equity: preliminary data on diabetes management, *Journal of Public Health*, Oxford University Press, 2006, 28:3, 221-225. Available at: http://jpubhealth.oxfordjournals.org/cgi/reprint/28/3/221

Updated: June 2011

Controlled blood glucose levels (7 or less) in patients with diabetes mellitus

Purpose:

To help reduce the level of risk to health for NHS patients with diabetes mellitus and ensure high standards of primary health care and treatment delivered to them.

HbA1c is a marker of long-term control of diabetes. Better control leads to fewer complications in patients with both insulin dependent and non-insulin dependent diabetes. There is no trial evidence to support the frequency of HbA1c measurement. The relationship between hyperglycaemia and cardiovascular risk is essentially linear, so for those with raised HbA1c levels, better glycaemic control should lead to reduced cardiac risk.

The three target levels for HbA1c (7%, 8% and 9%) are designed to provide an incentive to improve glycaemic control across the distribution of HbA1c values. The lower level may not be achievable for all patients.

A level of 7 or less has been selected as an optimal level of control in diabetic patients for the purposes of audit and reporting.

Definition of indicator and its variants:

Proportion of patients with diabetes mellitus whose last HbA1c is 7 or less (or equivalent test / reference range depending on local laboratory) in the previous 15 months.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	17+	E, GOR, SHA, PCO	FY 2009/10		27F_623PC_10_V1

Numerator:

Numerator data - Patients on the diabetes mellitus register whose last HbA1c test result obtained in the 15 months before the reference date is 7 or less.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

There have been some definitional changes in 2009/10 which have affected the data for this indicator. For more details see 'QOF Changes and New Indicators for 2009/10' available at:
http://www.bma.org.uk/images/QOFchanges200910_tcm41-178932.pdf

Denominator:

Denominator data - All patients on the diabetes mellitus register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the nine months before the reference date;
- diabetes exception reported in the 15 months before the reference date;
- diabetes diagnosis recorded in the nine months before the reference date;
- maximum tolerated diabetes treatment recorded in the 15 months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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Updated: June 2011

Blood glucose levels (9 or less) in patients with diabetes mellitus

Purpose:

To help reduce the level of risk to health for NHS patients with diabetes mellitus and ensure high standards of primary health care and treatment delivered to them.

HbA1c is a marker of long-term control of diabetes. Better control leads to fewer complications in patients with both insulin dependent and non-insulin dependent diabetes. There is no trial evidence to support the frequency of HbA1c measurement. The relationship between hyperglycaemia and cardiovascular risk is essentially linear, so for those with raised HbA1c levels, better glycaemic control should lead to reduced cardiac risk.

The three target levels for HbA1c (7%, 8% and 9%) are designed to provide an incentive to improve glycaemic control across the distribution of HbA1c values. The lower level may not be achievable for all patients.

Auditing the proportion of patients with an HbA1c measurement 9 or less is designed to provide an incentive to improve glycaemic control amongst those with high levels of HbA1c who are at particular risk. The target level has been reduced in order to provide an incentive to improve the care of more people with high levels of HbA1c.

Definition of indicator and its variants:

Proportion of patients with diabetes mellitus whose last HbA1c is 8 or less (or equivalent test / reference range depending on local laboratory) in the previous 15 months.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	17+	E, GOR, SHA, PCO	FY 2009/10		27G_624PC_10_V1

Numerator:

Numerator data - Patients on the diabetes mellitus register whose last HbA1c test result obtained in the 15 months before the reference date is 9 or less..

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

There have been some definitional changes in 2009/10 which have affected the data for this indicator. For more details see 'QOF Changes and New Indicators for 2009/10' available at:
http://www.bma.org.uk/images/QOFchanges200910_tcm41-178932.pdf

Denominator:

Denominator data - All patients on the diabetes mellitus register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the nine months before the reference date;
- exception reported in the 15 months before the reference date;
- diabetes diagnosis recorded in the nine months before the reference date;
- maximum tolerated diabetes treatment recorded in the 15 months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
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Updated: June 2011

Retinal screening in patients with diabetes mellitus

Purpose:

To help reduce the level of risk to health for NHS patients with diabetes mellitus and ensure high standards of primary health care and treatment delivered to them.

Screening for diabetic retinal disease is effective at detetecting unrecognised sight-threatening retinopathy. Systematic annual screening should be provided for all patients with diabetes.

Definition of indicator and its variants:

Proportion of patients with diabetes mellitus who have a record of retinal screening in the previous 15 months.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	17+	E, GOR, SHA, PCO	FY 2009/10		27H_625PC_10_V1

Numerator:

Numerator data - Patients on the diabetes mellitus register who have a record of retinal screening in the 15 months before the reference date.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the diabetes mellitus register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the three months before the reference date;
- diabetes exception reported in the 15 months before the reference date;
- retinal screening exception reported in the 15 months before the reference date;
- diabetes diagnosis recorded in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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Updated: June 2011

Peripheral pulse checking in patients with diabetes mellitus

Purpose:

To help reduce the level of risk to health for NHS patients with diabetes mellitus and ensure high standards of primary health care and treatment delivered to them.

Patients with diabetes are at high risk of foot complications. Inspection for vasculopathy is needed to detect problems. Diabetic patients with foot problems are likely to benefit from referral to specialist diabetic chiropody services.

Definition of indicator and its variants:

Proportion of patients with diabetes mellitus with a record of the presence or absence of peripheral pulses in the previous 15 months.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	17+	E, GOR, SHA, PCO	FY 2009/10		27I_626PC_10_V1

Numerator:

Numerator data - Patients on the diabetes mellitus register with a record of peripheral pulse testing conducted in the 15 months before the reference date.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the diabetes mellitus register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the three months before the reference date;
- diabetes exception reported in the 15 months before the reference date;
- foot examination exception reported in the 15 months before the reference date;
- diabetes diagnosis recorded in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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Updated: June 2011

Neuropathy testing in patients with diabetes mellitus

Purpose:

To help reduce the level of risk to health for NHS patients with diabetes mellitus and ensure high standards of primary health care and treatment delivered to them.

Patients with diabetes are at high risk of foot complications. Inspection for neuropathy is needed to detect problems. It is recommended that the measurement of foot sensation should be carried out at least annually. Foot sensation should be considered abnormal if monofilament and/or vibration sensation are impaired.

Definition of indicator and its variants:

Proportion of patients with diabetes mellitus who have a record of neuropathy testing in the previous 15 months.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	17+	E, GOR, SHA, PCO	FY 2009/10		27J_627PC_10_V1

Numerator:

Numerator data - Patients on the diabetes mellitus register with a record of neuropathy testing conducted in the 15 months before the reference date.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the diabetes mellitus register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the three months before the reference date;
- diabetes exception reported in the 15 months before the reference date;
- foot examination exception reported in the 15 months before the reference date;
- diabetes diagnosis recorded in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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Updated: June 2011

Blood pressure in patients with diabetes mellitus

Purpose:

To help reduce the level of risk to health for NHS patients with diabetes mellitus and ensure high standards of primary health care and treatment delivered to them.

Cardiovascular disease is a major cause of morbidity and mortality in people with diabetes. Hypertension is associated with an increased risk of many complications of diabetes including coronary heart disease. Blood pressure (BP) lowering in people with diabetes reduces the risk of macrovascular and microvascular disease. It should be measuerd at least annually in patients with diabetes and a BP reading of 145/85 mmHg is used as the audit standard for patients with diabetes.

Definition of indicator and its variants:

Proportion of patients with diabetes mellitus whose last BP reading (measured in the previous 15 months) is 145/85 mmHg or less.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	17+	E, GOR, SHA, PCO	FY 2009/10		27K_628PC_10_V1

Numerator:

Numerator data - Patients on the diabetes mellitus register whose last BP reading measured in the 15 months before the reference date is 145/85 mmHg or less.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the diabetes mellitus register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- BP recording exception reported in the 15 months before the reference date;
- registered in the nine months before the reference date;
- diabetes exception reported in the 15 months before the reference date;
- diabetes diagnosis recorded in the nine months before the reference date;
- maximal BP therapy recorded in the 15 months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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Updated: June 2011

Micro-albuminuria testing in patients with diabetes mellitus

Purpose:

To help reduce the level of risk to health for NHS patients with diabetes mellitus and ensure high standards of primary health care and treatment delivered to them.

Diabetes patients are at risk of developing nephropathy. Measurement of urinary albumin loss is a screening test for diabetic nephropathy. Urinary microalbuminuria has been identified as an independent risk factor for cardiovascular complications. Its presence is therefore a pointer to the need for more rigorous management of all cardiovascular risk factors. All patients with diabetes should have their urinary albumin concentration measured at diagnosis and at regular intervals thereafter, usually annually.

Diabaetic neuropathy is defined by a raised urinary albumin excretion of greater than 300mg/day (indicating clinical proteinuria). Patients with proteinuria should be separately recorded after urinary tract infection has been excluded.

Definition of indicator and its variants:

Proportion of patients with diabetes mellitus who have a record of micro-albuminuria testing in the previous 15 months (except patients with proteinuria).

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	17+	E, GOR, SHA, PCO	FY 2009/10		27L_629PC_10_V1

Numerator:

Numerator data - Patients on the diabetes mellitus register who have a record of micro-albuminuria testing (except those with proteinuria) in the 15 months before the reference date.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the diabetes mellitus register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- record of proteinuria exception;
- registered in the three months before the reference date;
- diabetes exception reported in the 15 months before the reference date;
- diabetes diagnosis recorded in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11

months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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Updated: June 2011

Renal function testing in patients with diabetes mellitus

Purpose:

To help reduce the level of risk to health for NHS patients with diabetes mellitus and ensure high standards of primary health care and treatment delivered to them.

Diabetic patients are at risk of developing nephropathy. Measurement of serum creatinine is a screening test for diabetic nephropathy. All patients with diabetes should have their serum creatinine measured at diagnosis and at regular intervals thereafter, usually annually.

Estimated glomerular filtration rate (eGFR), based on serum creatinine is reported as a better means to detect and monitor early renal disease and has therefore been included in this indicator. In the long term, eGFR should be easier for patients to understand, as log transformation is not required to assess change in renal function.

Definition of indicator and its variants:

Proportion of patients with diabetes mellitus who have a record of eGFR or serum creatinine testing in the previous 15 months.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	17+	E, GOR, SHA, PCO	FY 2009/10		27M_630PC_10_V1

Numerator:

Numerator data - Patients on the diabetes mellitus register with a record of eGFR or serum creatinine testing conducted in the 15 months before the reference date.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the diabetes mellitus register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the three months before the reference date;
- diabetes exception reported in the 15 months before the reference date;
- diabetes diagnosis recorded in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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11. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf
12. Sigfrid L, Turner C, Crook D, Ray S. Using the UK primary care Quality and Outcomes Framework to audit health care equity: preliminary data on diabetes management, *Journal of Public Health*, Oxford University Press, 2006, 28:3, 221-225. Available at: http://jpubhealth.oxfordjournals.org/cgi/reprint/28/3/221

Updated: June 2011

ACE inhibitor therapy for patients with diabetes mellitus

Purpose:

To help reduce the level of risk to health for NHS patients with diabetes mellitus and ensure high standards of primary health care and treatment delivered to them.

The progression of renal disease in patients with diabetes is slowed by treatment with ACE inhibitors. Similar benefits occur from treatment with angiotensin II antagonists (A2) in patients who are intolerant of ACE inhibitors.

Definition of indicator and its variants:

Proportion of patients with diabetes mellitus with renal disease who are treated with ACE inhibitors (or A2 antagonists), unless contraindications or side-effects are recorded.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	17+	E, GOR, SHA, PCO	FY 2009/10		27N_631PC_10_V1

Numerator:

Numerator data - Patients on the diabetes mellitus register with proteinuria or micro-albuminuria who are currently (measured as a prescription within the six months up to reference date) treated with ACE inhibitors (or A2 antagonists).

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the diabetes mellitus register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- no record of proteinuria / micro-albuminuria;
- registered in the three months before the reference date;
- diabetes exception reported in the 15 months before the reference date;
- diabetes diagnosis recorded in the three months before the reference date;
- persistent and expiring ACE inhibitor contraindications recorded;
- persistent and expiring A2 antagonist contraindications recorded.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). As a result, the inflated number of patients in the denominator may incorrectly indicate a lower level of primary health care performance.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments, and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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Updated: June 2011

Cholesterol levels in patients with diabetes mellitus

Purpose:

To help reduce the level of risk to health for NHS patients with diabetes mellitus and ensure high standards of primary health care and treatment delivered to them.

Vascular disease is a common complication of diabetes. Control of risk factors including serum cholesterol is associated with a reduction in vascular risk. There is ongoing debate concerning levels of serum cholesterol at which intervention should take place in diabetic patients who do not apparently have cardiovascular disease.

Definition of indicator and its variants:

Proportion of patients with diabetes mellitus whose last measured total cholesterol level (measured in the previous 15 months) is five mmol/l or less.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	17+	E, GOR, SHA, PCO	FY 2009/10		27O_632PC_10_V1

Numerator:

Numerator data - Patients on the diabetes mellitus register whose last total cholesterol level measured in the 15 months before the reference date is five mmol/l or less.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the diabetes mellitus register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the nine months before the reference date;
- diabetes exception reported in the 15 months before the reference date;
- diabetes diagnosis recorded in the nine months before the reference date;
- persistent exception from serum cholesterol target reported;
- expiring exception from the serum cholesterol target reported in the 15 months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
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Updated: June 2011

Vaccination: influenza, for patients with diabetes mellitus

Purpose:

To help reduce the level of risk to health for NHS patients with diabetes mellitus and ensure high standards of primary health care and treatment delivered to them.

The Department of Health and the Joint Committee on Vaccination and Immunisation currently recommend influenza vaccination for patients with diabetes.

Definition of indicator and its variants:

Proportion of patients with diabetes mellitus who have had an influenza vaccination administered.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	17+	E, GOR, SHA, PCO	FY 2009/10		27P_633PC_10_V1

Numerator:

Numerator data - Patients on the diabetes mellitus register who have a record of influenza vaccination in the relevant period (in the preceding 1st September to 31st March), unless contraindications or side-effects are recorded.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the diabetes mellitus register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the three months before the reference date;
- diabetes exception reported in the 15 months before the reference date;
- diabetes diagnosis recorded in the three months before the reference date;
- persistent influenza vaccination contraindications recorded;
- expiring influenza vaccination contraindications recorded in the 15 months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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Updated: June 2011

Blood glucose levels (8 or less) in patients with diabetes mellitus

Purpose:

To help reduce the level of risk to health for NHS patients with diabetes mellitus and ensure high standards of primary health care and treatment delivered to them.

HbA1c is a marker of long-term control of diabetes. Better control leads to fewer complications in patients with both insulin dependent and non-insulin dependent diabetes. There is no trial evidence to support the frequency of HbA1c measurement. The relationship between hyperglycaemia and cardiovascular risk is essentially linear, so for those with raised HbA1c levels, better glycaemic control should lead to reduced cardiac risk.

The three target levels for HbA1c (7%, 8% and 9%) are designed to provide an incentive to improve glycaemic control across the distribution of HbA1c values. The lower level may not be achievable for all patients.

Auditing the proportion of patients with an HbA1c measurement 8 or less is designed to provide an incentive to improve glycaemic control across the range of HbA1c values.

Definition of indicator and its variants:

Proportion of patients with diabetes mellitus whose last HbA1c is 8 or less (or equivalent test / reference range depending on local laboratory) in the previous 15 months.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	17+	E, GOR, SHA, PCO	FY 2009/10		27Q_681PC_10_V1

Numerator:

Numerator data - Patients on the diabetes mellitus register whose last HbA1c test result obtained in the 15 months before the reference date is 8 or less..

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

This is a new indicator. For more details see 'QOF Changes and New Indicators for 2009/10' available at: http://www.bma.org.uk/images/QOFchanges200910_tcm41-178932.pdf

Denominator:

Denominator data - All patients on the diabetes mellitus register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the nine months before the reference date;
- exception reported in the 15 months before the reference date;
- diabetes diagnosis recorded in the nine months before the reference date;
- maximum tolerated diabetes treatment recorded in the 15 months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
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8. The Health and Social Care Information Centre, *National Quality and Outcomes Framework Statistics for England 2004/05*. Available at: http://www.ic.nhs.uk/webfiles/publications/qof0405/QOF0405_Statistical_Bulletin.pdf
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Updated: June 2011

Years of life lost due to mortality from diabetes

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from diabetes (ICD-10 E10-E14).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		27R_069CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		27R_069DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from diabetes classified by underlying cause of death (ICD-10 E10-E14), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *National Service Framework for Diabetes – Delivery Strategy*. London: Department of Health, 2002. Available at: http://www.dh.gov.uk/assetRoot/04/03/28/23/04032823.pdf
2. Bajekal M, Becher H, Boreham R, Brookes M. *Health Survey for England - The Health of Minority Ethnic Groups '99*. London: The Stationery Office, 2001.
3. Department of Health. *National Service Framework for Diabetes – Standards*. London: Department of Health, 2001.
4. McIntosh A, et al. *Clinical guidelines and evidence review for Type 2 diabetes: management of blood glucose*. Sheffield: ScHARR, University of Sheffield, 2001.
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6. Department of Health. *Health Survey for England - Cardiovascular Disease*. London: The Stationery Office, 1998.
7. Department of Health. *Independent Inquiry into Inequalities in Health Report*. London: The Stationery Office, 1998.

Updated: March 2011

Mortality from epilepsy

Purpose:

To reduce deaths from epilepsy.

Definition of indicator and its variants:

Mortality from epilepsy (ICD-10 G40-G41 equivalent to ICD-9 345).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2008		28A_063NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		28A_063CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		28A_063SM00++_09_V1 28A_063SM0074_09_V1
		All ages			1993-09	28A_063SMT00++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		28A_063DR00++_09_V1 28A_063DR0074_09_V1
		All ages			1993-09	28A_063DRT00++_09_V1

Numerator:

Numerator data - Deaths from epilepsy, classified by underlying cause of death (ICD-10 G40-G41, ICD-9 345 adjusted), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by ONS. Trend data cannot include years prior to 1993, because ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males   All Ages: 1.014
Females   All Ages: 1.233

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*

Interpretation of indicators:

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Scottish Intercollegiate Guidelines Network. *Diagnosis and management of epilepsy in adults. A national clinical Guideline*. Edinburgh: Scottish Intercollegiate Guidelines Network, 2003.
2. Sowerby Centre for Health Informatics at Newcastle. *NHS Clinical Knowledge Summaries - Epilepsy.* CKS website, 2010. Available at: http://www.cks.nhs.uk/epilepsy
3. Department of Health. *Improving services for people with epilepsy*. London: Department of Health, 2003.
4. Department of Health. *Services for patients with epilepsy*. London: Department of Health, 2000.

Updated: March 2011

Prevalence: epilepsy

Purpose:

To ascertain the prevalence of epilepsy from General Practice records and help ensure high standards of primary health care and treatment delivered to NHS patients.

Epilepsy is the most common serious neurological condition, affecting about 5 to 10 per 1,000 of the population at any one time. Few epilepsies are preventable, but much of the handicap that results could be prevented by appropriate clinical management.

For the purposes of the QOF, epilepsy is defined as 'recurrent unprovoked seizures'.

Definition of indicator and its variants:

Proportion of patients receiving drug treatment for epilepsy in a GP registered population, excluding patients who had epilepsy in the past, and may have been off treatment and fit-free for many years.

Epilepsy definition was revised in 2006/07 data set. The QOF rules restrict the epilepsy register to patients currently on treatment and exclude those under 18 years of age.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	18+	E, GOR, SHA, PCO	FY 2009/10		28B_640PC_10_V1

Numerator:

Numerator data - Patients registered with GP practices with a coded diagnosis of epilepsy receiving drug treatment for epilepsy.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

Denominator:

Denominator data - All patients aged 18 and over registered with GP practices (estimated age-banded practice list size).

Source of denominator data - See "Numerator data".

Comments on denominator data - Age-banded practice list sizes were obtained from the Prescription Services Division (RxS) of the NHS Business Services Authority.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

From 2009 onwards, National Prevalence Day has been moved to 31st March (previously 14th February) so that prevalence is calculated on the same basis as disease registers for indicator denominators.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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11. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf
12. Scottish Intercollegiate Guidelines Network, *Diagnosis and management of epilepsy in adults*, Guideline, 2005. Available at: http://www.sign.ac.uk/pdf/sign70.pdf

Updated: June 2011

Record of seizure frequency among patients with epilepsy

Purpose:

To help reduce the level of risk to health for NHS patients with epilepsy and ensure high standards of primary health care and treatment delivered to them.

Epilepsy is often poorly managed in general practice, and there are insufficient specialist resources to provide specialist supervision for most patients. It is therefore recommended that seizure type and frequency are, among other things, recorded routinely.

Definition of indicator and its variants:

Proportion of patients on drug treatment for epilepsy who have a record of seizure frequency in the previous 15 months.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	18+	E, GOR, SHA, PCO	FY 2009/10		28C_641PC_10_V1

Numerator:

Numerator data – Patients on drug treatment for epilepsy with a record of seizure frequency in the previous 15 months.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on drug treatment for epilepsy excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the three months before the reference date;
- epilepsy exception reported in the 15 months before the reference date;
- epilepsy diagnosis recorded in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
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12. Scottish Intercollegiate Guidelines Network, *Diagnosis and management of epilepsy in adults*, Guideline, 2005. Available at: http://www.sign.ac.uk/pdf/sign70.pdf

Updated: June 2011

Patients with epilepsy on drug treatment and convulsion free

Purpose:

To help reduce the level of risk to health for NHS patients with epilepsy and ensure high standards of primary health care and treatment delivered to them.

Seizure control gives some indication of how effective the management of epilepsy is. Therefore, general practitioners are encouraged to record the frequency of convulsions as accurately as possible.

Definition of indicator and its variants:

Proportion of patients on drug treatment for epilepsy who have been convulsion free.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	18+	E, GOR, SHA, PCO	FY 2009/10		28D_642PC_10_V1

Numerator:

Numerator data - Patients on drug treatment for epilepsy who have been seizure free in the last 12 months, recorded in the previous 15 months.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on drug treatment for epilepsy excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the three months before the reference date;
- epilepsy exception reported in the 15 months before the reference date;
- maximal anticonvulsant therapy recorded in the 15 months before reference date;
- epilepsy diagnosis recorded in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09,* September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
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3. NHS Employers and General Practitioners Committee BMA. *Quality and Outcomes Framework guidance for GMS contract 2008/09*, April 2008. Available at: http://www.nhsemployers.org/SiteCollectionDocuments/QUALITY_OUT_COMPLETE_CD_110209.pdf
4. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Statistics for England 2007/08*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2007-08/QOF%20200708%20Statistical%20Bulletin.pdf
5. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07.* Available at: http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf
6. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework or England 2005/06.* Available at: http://www.ic.nhs.uk/webfiles/publications/qof/NationalQualityOutcomesFramework280906_PDF.pdf
7. The Health and Social Care Information Centre, *National Quality and Outcomes Framework Statistics for England 2004/05*. Available at: http://www.ic.nhs.uk/webfiles/publications/qof0405/QOF0405_Statistical_Bulletin.pdf
8. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68
9. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
10. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf
11. Scottish Intercollegiate Guidelines Network, *Diagnosis and management of epilepsy in adults*, Guideline, 2005. Available at: http://www.sign.ac.uk/pdf/sign70.pdf

Updated: June 2011

Years of life lost due to mortality from epilepsy

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from epilepsy (ICD-10 G40-G41).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		28E_091CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		28E_091DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from epilepsy classified by underlying cause of death (ICD-10 G40-G41), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Scottish Intercollegiate Guidelines Network. *Diagnosis and management of epilepsy in adults. A national clinical Guideline*. Edinburgh: Scottish Intercollegiate Guidelines Network, 2003.
2. Sowerby Centre for Health Informatics at Newcastle. *NHS Clinical Knowledge Summaries - Epilepsy.* CKS website, 2010. Available at: http://www.cks.nhs.uk/epilepsy
3. Department of Health. *Improving services for people with epilepsy*. London: Department of Health, 2003.
4. Department of Health. *Services for patients with epilepsy*. London: Department of Health, 2000.

Updated: March 2011

Epilepsy review among patients on drug treatment for epilepsy

Purpose:

To help reduce the level of risk to health for NHS patients with epilepsy and ensure high standards of primary health care and treatment delivered to them.

The involvement of the patient and/or carer in the management of epilepsy is included to emphasise the importance of a face to face medication review, where clinically appropriate. It is recommended that the following information should be recorded routinely in patients' notes at each review:

- seizure type and frequency, including date of last seizure;
- antiepileptic drug therapy and dosage;
- any adverse drug reactions arising from antiepileptic drug therapy;
- key indicators of the quality care (i.e. topics discussed and plans for future review).

Definition of indicator and its variants:

Proportion of patients on drug treatment for epilepsy who have a record of a medication review involving the patient and/or carer.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	18+	E, GOR, SHA, PCO	FY 2009/10		28F_675PC_10_V1

Numerator:

Numerator data - Patients on drug treatment for epilepsy who have a record of a medication review in the previous 15 months.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on drug treatment for epilepsy excluding those who have been exception reported. Patients may be exception reported for the following reasons:

- registered in the three months before the reference date;
- epilepsy exception reported in the 15 months before the reference date;
- epilepsy diagnosis recorded in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
3. NHS Employers and General Practitioners Committee BMA. *Quality and Outcomes Framework guidance for GMS contract 2008/09*, April 2008. Available at: http://www.nhsemployers.org/SiteCollectionDocuments/QUALITY_OUT_COMPLETE_CD_110209.pdf
4. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Statistics for England 2007/08*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2007-08/QOF%20200708%20Statistical%20Bulletin.pdf
5. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07.* Available at: http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf
6. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework or England 2005/06.* Available at: http://www.ic.nhs.uk/webfiles/publications/qof/NationalQualityOutcomesFramework280906_PDF.pdf
7. The Health and Social Care Information Centre, *National Quality and Outcomes Framework Statistics for England 2004/05*. Available at: http://www.ic.nhs.uk/webfiles/publications/qof0405/QOF0405_Statistical_Bulletin.pdf
8. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68
9. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
10. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf
11. Scottish Intercollegiate Guidelines Network, *Diagnosis and management of epilepsy in adults*, Guideline, 2005. Available at: http://www.sign.ac.uk/pdf/sign70.pdf

Updated: June 2011

Incidence of meningococcal meningitis

Purpose:

To reduce the incidence of meningococcal meningitis.

Definition of indicator and its variants:

Notifications of meningococcal meningitis.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of notifications	P	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		29A_088NO_09_V1
Directly age-standardised notification rate per 100,000	P	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		29A_088DR_09_V1

Numerator:

Numerator data - Notifications of meningococcal meningitis in the respective calendar year.

Source of numerator data - Health Protection Agency, Communicable Disease Surveillance Centre.

Comments on numerator data - Meningococcal meningitis is notifiable under the Public Health Acts and Infectious Disease Regulations. Detailed statistics and a description of the reporting system are published annually by the Office for National Statistics (Series MB2).

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - Office for National Statistics (ONS).

Comments on denominator data - The population figures used are ONS mid-year estimates for 2009 derived from the 2001 Census with allowance for subsequent births, deaths, migration, and ageing of the population.

Statistical methods:

Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Health Protection Agency. *Guidance for public health management of meningococcal disease in the UK.* Version 01.4-2011. Available at: http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1194947389261
2. Meningitis Research Foundation. *Early Management of Meningococcal Disease in Children*. Bristol: Meningitis Research Foundation, 1999.

Updated: June 2011

Mortality from infectious and parasitic disease

Purpose:

To reduce deaths from infectious and parasitic disease.

Definition of indicator and its variants:

Mortality from infectious and parasitic disease (ICD-10 A00-B99 equivalent to ICD-9 001-139).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		29B_101NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		29B_101CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <75 All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09	1993-09	29B_101SM00++_09_V1 29B_101SM0074_09_V1 29B_101SMT00++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <75 All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09	1993-09	29B_101DR00++_09_V1 29B_101DR0074_09_V1 29B_101DRT00++_09_V1

Numerator:

Numerator data - Deaths from infectious and parasitic disease, classified by underlying cause of death (ICD-10 A00-B99, ICD-9 001-139 adjusted), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data – Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males	0-74yrs: 0.995	75-84yrs: 1.137	85+yrs: 1.184
Females	0-74yrs: 0.978	75-84yrs: 1.17	85+yrs: 1.236

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *Screening for infectious diseases in pregnancy.* London: Department of Health, 2003. Available at: http://www.dh.gov.uk/assetRoot/04/09/20/49/04092049.pdf
2. Department of Health. *Getting Ahead of the Curve A strategy for combating infectious diseases (including other aspects of health protection).* London: Department of Health, 2002.

Updated: March 2011

Years of life lost due to mortality from infectious and parasitic disease

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from infectious and parasitic disease (ICD-10 A00-B99).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		29C_092CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		29C_092DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from infectious and parasitic disease classified by underlying cause of death (ICD-10 A00-B99), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Department of Health. *Screening for infectious diseases in pregnancy.* London: Department of Health, 2003. Available at: http://www.dh.gov.uk/assetRoot/04/09/20/49/04092049.pdf
2. Department of Health. *Getting Ahead of the Curve A strategy for combating infectious diseases (including other aspects of health protection).* London: Department of Health, 2002.

Updated: March 2011

Incidence of tuberculosis

Purpose:

To reduce the incidence of tuberculosis.

Definition of indicator and its variants:

Notifications of tuberculosis.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of notifications	P	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		30A_098NO_09_V1
Directly age-standardised notification rate per 100,000	P	All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		30A_098DR_09_V1

Numerator:

Numerator data - Notifications of tuberculosis in the respective calendar year.

Source of numerator data - Health Protection Agency, Communicable Disease Surveillance Centre.

Comments on numerator data - Tuberculosis is notifiable under the Public Health Acts and Infectious Disease Regulations. Detailed statistics and a description of the reporting system are published annually by the Office for National Statistics (Series MB2).

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar year.

Source of denominator data - Office for National Statistics (ONS).

Comments on denominator data - The population figures used are ONS mid-year estimates for 2009 derived from the 2001 Census with allowance for subsequent births, deaths, migration, and ageing of the population.

Statistical methods:

Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Health Protection Agency. TB guidelines and key documents available at:
   http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/Tuberculosis/Guidelines/TBGuid01Guidelines/
2. Health Protection Agency. Guidance on management of patients with tuberculosis and their contacts in Essex. Version August 2009. Available at: http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1194947346657

Updated: June 2011

Mortality from tuberculosis

Purpose:

To reduce deaths from tuberculosis.

Definition of indicator and its variants:

Mortality from tuberculosis (ICD-10 A15-A19 equivalent to ICD-9 010-018).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		30B_102NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		30B_102CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <75, 5-64	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		30B_102SM00++_09_V1 30B_102SM0074_09_V1 30B_102SM0564_09_V1
		All ages			1993-09	30B_102SMT00++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <75, 5-64	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		30B_102DR00++_09_V1 30B_102DR0074_09_V1 30B_102DR0564_09_V1
		All ages			1993-09	30B_102DRT00++_09_V1

Numerator:

Numerator data - Deaths from tuberculosis, classified by underlying cause of death (ICD-10 A15-A19, ICD-9 010-018), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males   All Ages: 1
Females   All Ages: 1

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European standard population

Interpretation of indicators:

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Updated: March 2011

Years of life lost due to mortality from tuberculosis

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from tuberculosis (ICD-10 A15-A19).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		30C_093CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		30C_093DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from tuberculosis classified by underlying cause of death (ICD-10 A15-A19), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Updated: March 2011

Emergency hospital admissions: schizophrenia

Purpose:

The national service framework for mental health highlights the preference for community over hospital care. With this policy being expected to produce better outcomes, assessing the way the services for mental health are delivered may be used as a proxy for quality of care.

Definition of indicator and its variants:

Emergency admissions to hospital for schizophrenia.

Statistic	Sex	Age group	Organisation	Period		File-worksheet Name
			(see glossary)	Current data	Trend data	
Indirectly age and sex-standardised rate per 100,000 (standardised to 2005/06)	P F M	15-74	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County; LA (boundaries as at April 2009); PCO (boundaries as at October 2006); CTY.	FY 2008/09	FY 2002/03, FY 2003/04, FY 2004/05, FY 2005/06, FY 2006/07, FY 2007/08	31A_111ISR7QP_09_V1 31A_111ISR7QF_09_V1 31A_111ISR7QM_09_V1

Numerator:

Numerator data - The number of finished and unfinished continuous inpatient (CIP) spells for patients of ages 15-74 years with an emergency admission and any of the following primary diagnoses (ICD-10 codes) in the respective financial year:

- F20.0   Paranoid schizophrenia;
- F20.1   Hebephrenic schizophrenia;
- F20.2   Catatonic schizophrenia;
- F20.3   Undifferentiated schizophrenia;
- F20.4   Post-schizophrenic depression;
- F20.5   Residual schizophrenia;
- F20.6   Simple schizophrenia;
- F20.8   Other schizophrenia;
- F20.9   Schizophrenia, unspecified;
- F21.-   Schizotypal disorder;
- F23.2   Acute schizophrenia-like psychotic disorder;
- F25.-   Schizoaffective disorders.

The following fields and values are used for the numerator:

The first episode in the CIP spell has:
ADMISORC not = 51, 52 or 53 (admission source);
AND EPITYPE = 1 (episode type);
AND SEX = 1 or 2 (sex);
AND EPIORDER = 1 (episode order);
AND ADMIMETH = 21, 22, 23, 24 or 28 (emergency admission method);
AND EPISTART >= 01/04/YYYY and EPISTART <= 31/03/YYYY+1 (episode start date within year);
AND CLASSPAT = 1 (patient classification);
AND STARTAGE = 15-74 (age at start of episode);
AND DOB not 01/01/1900 or 01/01/1901 (date of birth).

Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Counts are by:
age / sex / organisation of residence in CIP spell (values for England are aggregates of these)

where:
      age bands are 15-19, 20-24 … 65-69, 70-74;
      sex is 1, 2 (male and female).

Source of numerator data - Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year. England, The NHS Information Centre for health and social care.

Comments on numerator data - It is important, for the purposes of measuring incidence, to count persons as opposed to episodes of care, as each person with the condition should only be counted once during each admission. This is done by counting CIP spells (epiorder 1) only. Some transfers, which are also coded epiorder 1 and emergency, could lead to double counting. In order to avoid this, spells which have an ADMISORC of 51-53, indicating a transfer from another NHS Trust, are excluded.

Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March. In order to avoid double counting that spell in both financial years, only spells which started during the financial year of analysis are counted.

Deaths in the community prior to admission are not included, nor are patients who get treated in the community, as data about them are not available.

Spells are attributed to the organisation of residence, based on the numerator.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). These show the proportion of diagnoses not coded. There may be variation between hospitals in the way that they code diagnoses to the fourteen diagnosis fields in each episode, particularly primary diagnosis. For instance, they may code in the order in which diagnoses were made, or according to the perceived importance or complexity. This may affect whether a particular spell is selected for inclusion in the numerator of this indicator.

Denominator:

Denominator data - The denominator is the resident population for the respective organisation.

Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at September 2009.

For further details on revisions to ONS mid-year population estimates, and their availability, see the comments in the specification for the 'Estimates of resident population' indicator.

Counts are by:
      age / sex / organisation of residence (values for England are aggregates of these)

where:
      age bands are; 15-19, 20-24 … 65-69, 70-74;
      sex is 1, 2 (male and female).

Source of denominator data - Office for National Statistics.

Statistical methods:

The indicator is indirectly standardised by age and sex. The person-based rate is standardised by age and sex using England age and sex rates as standards. The gender-specific rates are standardised by age using person-based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age and sex of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in admission rate from a previous year, plus the statistical significance of this change, have also been calculated. A positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator - This is a condition specific, cross-sectional annual comparative indicator, acting as a proxy for outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator – Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation and Local Authority level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence intervals for the two rates overlap, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity - A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may determine whether a patient gets admitted or not and may influence rates. Differences in case-mix (beyond that accounted for by standardisation), comorbidities and other potential risk factors also contribute to the variation. Current data do not allow assignment of severity of illness across continuous inpatient spells, nor do they allow adjustment for any of these factors. We have tried to deal with this constraint partially by presenting the data in clusters that are similar with respect to organisation type. Gender-specific data standardised to person rates are available.

Other potential confounding factors - The patterns of providing care may vary between organisations in terms of: extent of treatment in primary care settings; referral policies and practices; hospital outpatient facilities/walk-in clinics; and hospital inpatient admission policies.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess the extent to which admissions were potentially avoidable are recommended.

Relevant national initiatives:

The Department of Health's mental health national service framework.

Further reading:

1. Lakhani A, Coles J, Eayres D, Spence C, Sanderson C. Creative use of existing clinical and health outcomes data to assess NHS performance in England: Part 2 – more challenging aspects of monitoring. *BMJ* 2005; 330: 1486-1492.
2. Department of Health. *National service framework for mental health: modern standards and service models.* London: DH, 1999.

Updated: November 2010

Emergency hospital admissions: neuroses

Purpose:

The national service framework for mental health highlights the preference for community over hospital care. With this policy being expected to produce better outcomes, assessing the way the services for mental health are delivered may be used as a proxy for quality of care.

Definition of indicator and its variants:

Emergency admissions to hospital for neuroses.

Statistic	Sex	Age group	Organisation	Period		File-worksheet Name
			(see glossary)	Current data	Trend data	
Indirectly age and sex-standardised rate per 100,000 (standardised to 2005/06)	P F M	15-74	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County; LA (boundaries as at April 2009); PCO (boundaries as at October 2006); CTY.	FY 2008/09	FY 2002/03, FY 2003/04, FY 2004/05, FY 2005/06, FY 2006/07, FY 2007/08	31B_110ISR7RP_09_V1 31B_110ISR7RF_09_V1 31B_110ISR7RM_09_V1

Numerator:

Numerator data - The number of finished and unfinished continuous inpatient (CIP) spells for patients of ages 15-74 years with an emergency admission and any of the following primary diagnoses (ICD-10 codes) in the respective financial year:

- F40.0   Agoraphobia;
- F40.1   Social phobias;
- F40.2   Specific (isolated) phobias;
- F40.8   Other phobic anxiety disorders;
- F40.9   Phobic anxiety disorder, unspecified;
- F41.0   Panic disorder [episodic paroxysmal anxiety];
- F41.1   Generalized anxiety disorder;
- F41.2   Mixed anxiety and depressive disorder;
- F41.3   Other mixed anxiety disorders;
- F41.8   Other specified anxiety disorders;
- F41.9   Anxiety disorder, unspecified;
- F42.0   Predominantly obsessional thoughts or ruminations;
- F42.1   Predominantly compulsive acts [obsessional rituals];
- F42.2   Mixed obsessional thoughts and acts;
- F42.8   Other obsessive-compulsive disorders;
- F42.9   Obsessive-compulsive disorder, unspecified;
- F43.0   Acute stress reaction;
- F43.1   Post-traumatic stress disorder;
- F43.2   Adjustment disorders;
- F43.8   Other reactions to severe stress;
- F43.9   Reaction to severe stress, unspecified;
- F44.0   Dissociative amnesia;
- F44.1   Dissociative fugue;
- F44.2   Dissociative stupor;
- F44.3   Trance and possession disorders;
- F44.4   Dissociative motor disorders;
- F44.5   Dissociative convulsions;
- F44.6   Dissociative anaesthesia and sensory loss;
- F44.7   Mixed dissociative [conversion] disorders;
- F44.8   Other dissociative [conversion] disorders;
- F44.9   Dissociative [conversion] disorder, unspecified;
- F45.0   Somatization disorder;

- F45.1   Undifferentiated somatoform disorder;
- F45.2   Hypochondriacal disorder;
- F45.3   Somatoform autonomic dysfunction;
- F45.4   Persistent somatoform pain disorder;
- F45.8   Other somatoform disorders;
- F45.9   Somatoform disorder, unspecified;
- F48.0   Neurasthenia;
- F48.1   Depersonalization-derealization syndrome;
- F48.8   Other specified neurotic disorders;
- F48.9   Neurotic disorder, unspecified.

The following fields and values are used for the numerator:

The first episode in the CIP spell has:
   ADMISORC not = 51, 52 or 53 (admission source);
   AND EPITYPE = 1 (episode type);
   AND SEX = 1 or 2 (sex);
   AND EPIORDER = 1 (episode order);
   AND ADMIMETH = 21, 22, 23, 24 or 28 (emergency admission method);
   AND EPISTART >= 01/04/YYYY and EPISTART <= 31/03/YYYY+1 (episode start date within year);
   AND CLASSPAT = 1 (patient classification);
   AND STARTAGE = 15-74 (age at start of episode);
   AND DOB not 01/01/1900 or 01/01/1901 (date of birth).

Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
   SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Counts are by:
   age / sex / organisation of residence in CIP spell (values for England are aggregates of these)

where:
   age bands are 15-19, 20-24 … 65-69, 70-74;
   sex is 1, 2 (male and female).

Source of numerator data - Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year. England, The NHS Information Centre for health and social care.

Comments on numerator data - It is important, for the purposes of measuring incidence, to count persons as opposed to episodes of care, as each person with the condition should only be counted once during each admission. This is done by counting CIP spells (epiorder 1) only. Some transfers, which are also coded epiorder 1 and emergency, could lead to double counting. In order to avoid this, spells which have an ADMISORC of 51-53, indicating a transfer from another NHS Trust, are excluded.

Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March. In order to avoid double counting that spell in both financial years, only spells which started during the financial year of analysis are counted.

Deaths in the community prior to admission are not included, nor are patients who get treated in the community, as data about them are not available.

Spells are attributed to the organisation of residence, based on the numerator.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). These show the proportion of diagnoses not coded. There may be variation between hospitals in the way that they code diagnoses to the fourteen diagnosis fields in each episode, particularly primary diagnosis. For instance, they may code in the order in which diagnoses were made, or according to the perceived importance or complexity. This may affect whether a particular spell is selected for inclusion in the numerator of this indicator.

Denominator:

Denominator data - The denominator is the resident population for the respective organisation.

Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at September 2009.

For further details on revisions to ONS mid-year population estimates, and their availability, see the comments in the specification for the 'Estimates of resident population' indicator.

Counts are by:
> age / sex / organisation of residence (values for England are aggregates of these)

where:
> age bands are; 15-19, 20-24 … 65-69, 70-74;
> sex is 1, 2 (male and female).

Source of denominator data - Office for National Statistics.

Statistical methods:

The indicator is indirectly standardised by age and sex. The person-based rate is standardised by age and sex using England age and sex rates as standards. The gender-specific rates are standardised by age using person-based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age and sex of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in admission rate from a previous year, plus the statistical significance of this change, have also been calculated. A positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator - This is a condition specific, cross-sectional annual comparative indicator, acting as a proxy for outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator – Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation and Local Authority level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence intervals for the two rates overlap, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity - A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may determine whether a patient gets admitted or not and may influence rates. Differences in case-mix (beyond that accounted for by standardisation), comorbidities and other potential risk factors also contribute to the variation. Current data do not allow assignment of severity of illness across continuous inpatient spells, nor do they allow adjustment for any of these factors. We have tried to deal with this constraint partially by presenting the data in clusters that are similar with respect to organisation type. Gender-specific data standardised to person rates are available.

Other potential confounding factors - The patterns of providing care may vary between organisations in terms of: extent of treatment in primary care settings; referral policies and practices; hospital outpatient facilities/walk-in clinics; and hospital inpatient admission policies.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess the extent to which admissions were potentially avoidable are recommended.

Relevant national initiatives:

The Department of Health's mental health national service framework.

Further reading:

3. Lakhani A, Coles J, Eayres D, Spence C, Sanderson C. Creative use of existing clinical and health outcomes data to assess NHS performance in England: Part 2 – more challenging aspects of monitoring. *BMJ* 2005; 330: 1486-1492.
4. Department of Health. *National service framework for mental health: modern standards and service models.* London: DH, 1999.

Updated: November 2010

Mortality from suicide

Purpose:

To reduce the number of suicides.

Definition of indicator and its variants:

Mortality from intentional self-harm (ICD-10 X60-X84 equivalent to ICD-9 E950-E959). This indicator does not include deaths by injury undetermined.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		31C_113NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		31C_113CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		31C_113SM00++_09_V1 31C_113SM0074_09_V1
		All ages			1993-09	31C_113SMT00++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		31C_113DR00++_09_V1 31C_113DR0074_09_V1
		All ages			1993-09	31C_113DRT00++_09_V1

Numerator:

Numerator data - Deaths from intentional self-harm (ICD-10 X60-X84, ICD-9 E950-E959), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

This indicator is restricted to deaths classified as suicide. The directly age-standardised suicide rate, including deaths by injury undetermined whether accidentally or purposely inflicted, for persons of all ages, is a target indicator in the *Saving Lives: Our Healthier Nation* strategy (see "Further reading"). The target is a 20% reduction by the year 2010 from the baseline rate in 1995-97. Reduction in suicides was also a target in the *Health of the Nation* strategy. For data relating to suicide as defined in *Our Healthier Nation/Health of the Nation*, please see the indicator entitled "Suicide and Undetermined Injury".

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males   All Ages: 1
Females   All Ages: 1

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population
Annex 6: Goals of *Our Healthier Nation*

Interpretation of indicators:

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Brock A, Griffiths C. Trends in the mortality of young adults aged 15-44 in England and Wales, 1961-2001. *Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 22-31. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf
2. Griffiths C, Rooney C. The effect of the introduction of ICD-10 on trends in mortality from injury and poisoning in England and Wales. *Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 10-21. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf
3. Charlwood P, Mason A, Goldacre M, Cleary R, Wilkinson E. *Health Outcome Indicators: Severe Mental Illness. Report of a working group to the Department of Health*. Oxford: NCHOD, 1999. Available at: http://www.uhce.ox.ac.uk/hessepho/reports/CR8.pdf
4. Department of Health. *Saving Lives: Our Healthier Nation*. London: The Stationery Office, 1999.
5. Department of Health. *Health of the Nation - A Strategy for Health in England.* London: Her Majesty's Stationery Office, 1992.

Updated: March 2011

Mortality from suicide and injury undetermined

Purpose:

To reduce the number of suicides. The directly age-standardised suicide rate for persons of all ages is a target indicator in the *Saving Lives: Our Healthier Nation* strategy (See "Further reading"). The target is a 20% reduction by the year 2010 from the baseline rate in 1995-97. This indicator was also one of the targets in the *Health of the Nation* strategy.

Definition of indicator and its variants:

Mortality from intentional self-harm and injury undetermined whether accidentally or purposely inflicted (ICD-10 X60-X84, Y10-Y34 exc Y33.9 equivalent to ICD-9 E950-E959 and E980-E989 exc E988.8).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		31D_114NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		31D_114CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <75, 15+, 15-44	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		31D_114SM00++_09_V1 31D_114SM0074_09_V1 31D_114SM15++_09_V1 31D_114SM1544_09_V1
		All ages			1993-09	31D_114SMT00++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <75, 15+, 15-44	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		31D_114DR00++_09_V1 31D_114DR0074_09_V1 31D_114DR15++_09_V1 31D_114DR1544_09_V1
		All ages#		1995-97#		31D_114DR00++_97_V5
		All ages			1993-09	31D_114DRT00++_09_V1

Our Healthier Nation baseline

Numerator:

Numerator data - Deaths from intentional self-harm and injury undetermined whether accidentally or purposely inflicted (ICD-10 X60-X84, Y10-Y34 exc Y33.9, ICD-9 E950-E959 and E980-E989 exc E988.8), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males   All Ages: 1
Females   All Ages: 1

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia.*

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population
Annex 6: Goals of *Our Healthier Nation*

Interpretation of indicators:

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Brock A, Griffiths C. Trends in the mortality of young adults aged 15-44 in England and Wales, 1961-2001. *Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 22-31. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf
2. Griffiths C, Rooney C. The effect of the introduction of ICD-10 on trends in mortality from injury and poisoning in England and Wales*. Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 10-21. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf
3. Charlwood P, Mason A, Goldacre M, Cleary R, Wilkinson E. *Health Outcome Indicators: Severe Mental Illness. Report of a working group to the Department of Health*. Oxford: NCHOD, 1999. Available at: http://www.uhce.ox.ac.uk/hessepho/reports/CR8.pdf
4. Department of Health. *Saving Lives: Our Healthier Nation*. London: The Stationery Office, 1999.
5. Department of Health. *Health of the Nation - A Strategy for Health in England.* London: Her Majesty's Stationery Office, 1992.

Updated: March 2011

Prevalence: psychoses

Purpose:

To ascertain the prevalence of psychoses from General Practice records and help ensure high standards of primary health care and treatment delivered to NHS patients.

There are considerable difficulties around diagnostic labelling of chronic mental illness and instead of using specific diagnostic labels, a register of patients with severe long-term mental problems based on patient need was used previously. It was left to the discretion of general practices who was included on the register. In some cases it could be patients with psychotic illness with multiple care needs, and in others, patients with long-term depression who could benefit from structured care applied to other chronic diseases.

This indicator focuses on patients with serious mental illness and the register includes all people with a diagnosis of schizophrenia, bipolar affective disorder and other psychoses rather than a generic phrase that is open to variations in interpretation. The notion of agreeing to regular follow-up has also been removed to acknowledge the variation in interpretation of this clause and to bring the indicator in line with the rest of the QOF.

Definition of indicator and its variants:

Proportion of patients with schizophrenia, bipolar affective disorder and other psychoses in a GP registered population.

Since April 2006, the QOF definition has included only patients with serious mental illness. Previously, QOF relied upon a more generalised set of mental health conditions and also only included patients who required, and had consented to, regular follow-up.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		31H_645PC_10_V1

Numerator:

Numerator data - Patients registered with GP practices with a coded diagnosis of schizophrenia, bipolar affective disorder and other psychoses .

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

Denominator:

Denominator data - All patients registered with GP practices (total practice list size).

Source of denominator data - See "Numerator data".

Comments on denominator data - The practice list sizes are supplied to QMAS from the National Health Applications and Infrastructure Services (NHAIS).

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

From 2009 onwards, National Prevalence Day has been moved to 31st March (previously 14th February) so that prevalence is calculated on the same basis as disease registers for indicator denominators.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
4. NHS Employers and General Practitioners Committee BMA. *Quality and Outcomes Framework guidance for GMS contract 2008/09*, April 2008. Available at: http://www.nhsemployers.org/SiteCollectionDocuments/QUALITY_OUT_COMPLETE_CD_110209.pdf
5. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Statistics for England 2007/08*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2007-08/QOF%20200708%20Statistical%20Bulletin.pdf
6. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07.* Available at: http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf
7. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework or England 2005/06.* Available at: http://www.ic.nhs.uk/webfiles/publications/qof/NationalQualityOutcomesFramework280906_PDF.pdf
8. The Health and Social Care Information Centre, *National Quality and Outcomes Framework Statistics for England 2004/05*. Available at: http://www.ic.nhs.uk/webfiles/publications/qof0405/QOF0405_Statistical_Bulletin.pdf
9. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68
10. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
11. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf
12. Jamie G. QOF News: *The Crazy World of Mental Health*, 2007. Available at: http://www.gpcontract.co.uk/news/2007/01/crazy-world-of-mental-health.html

Updated: June 2011

Health review and treatment checks among patients with psychoses

Purpose:

To help reduce the level of risk to health for NHS patients with psychoses and ensure high standards of primary health care and treatment delivered to them.

In many cases, the bulk of care for patients with long-term mental health problems will be provided by specialist services, however, there are some aspects of management such as physical health which often lie within the general practitioner's responsibility. Patients with serious mental health problems are at considerably increased risk of physical ill-health than the general population. It is therefore good practice for a member of the practice team to review each patient's physical health on an annual basis.

Health promotion and disease prevention advice is particularly important for people with serious mental illness however there is good evidence that they are much less likely than other members of the general population to be offered, for example, blood pressure and cholesterol checks if they have concurrent coronary heart disease, and cervical screening.

Definition of indicator and its variants:

Proportion of patients with schizophrenia, bipolar affective disorder and other psychoses with a review recorded in the preceding 15 months. In the review there should be evidence that the patients have been offered routine health promotion and prevention advice appropriate to their age, gender and health status..

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		31I_646PC_10_V1

Numerator:

Numerator data - Patients diagnosed with schizophrenia, bipolar affective disorder and other psychoses with a review recorded within the 15 months before the reference date.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients with schizophrenia, bipolar affective disorder and other psychoses excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- not included on the QOF mental health register / taken off that register;
- registered in the three months before the reference date;
- mental health exception reported in the 15 months before the reference date;
- diagnosed with psychosis / schizophrenia / bipolar affective disease in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator

to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
4. NHS Employers and General Practitioners Committee BMA. *Quality and Outcomes Framework guidance for GMS contract 2008/09*, April 2008. Available at: http://www.nhsemployers.org/SiteCollectionDocuments/QUALITY_OUT_COMPLETE_CD_110209.pdf
5. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Statistics for England 2007/08*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2007-08/QOF%20200708%20Statistical%20Bulletin.pdf
6. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf
7. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework or England 2005/06.* Available at: http://www.ic.nhs.uk/webfiles/publications/qof/NationalQualityOutcomesFramework280906_PDF.pdf
8. The Health and Social Care Information Centre, *National Quality and Outcomes Framework Statistics for England 2004/05*. Available at: http://www.ic.nhs.uk/webfiles/publications/qof0405/QOF0405_Statistical_Bulletin.pdf
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10. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
11. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf
12. Jamie G. QOF News: *The Crazy World of Mental Health*, 2007. Available at: http://www.gpcontract.co.uk/news/2007/01/crazy-world-of-mental-health.html

Updated: June 2011

Thyroid and renal function testing in patients on lithium therapy

Purpose:

To help reduce the level of risk to health for NHS patients on lithium therapy and ensure high standards of primary health care and treatment delivered to them.

There is a much higher than normal incidence of hypercalcaemia and hypothyroidism, and of abnormal renal function tests, in patients with severe mental health problems treated with lithium. It is therefore necessary to check thyroid function and renal function on an annual basis.

Definition of indicator and its variants:

Proportion of patients on lithium therapy with a record of serum creatinine and thyroid stimulating hormone (TSH) levels in the preceding 15 months.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		31K_648PC_10_V1

Numerator:

Numerator data - Patients on lithium therapy with a record of serum creatinine and TSH levels in the 15 months before the reference date.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on lithium therapy excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- lithium prescribing recorded more than six months before the reference date
- registered in the three months before the reference date;
- mental health exception reported in the 15 months before the reference date;
- lithium prescribing recorded in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
4. NHS Employers and General Practitioners Committee BMA. *Quality and Outcomes Framework guidance for GMS contract 2008/09*, April 2008. Available at:
   http://www.nhsemployers.org/SiteCollectionDocuments/QUALITY_OUT_COMPLETE_CD_110209.pdf
5. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Statistics for England 2007/08*. Available at:
   http://www.ic.nhs.uk/webfiles/QOF/2007-08/QOF%20200708%20Statistical%20Bulletin.pdf
6. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07.* Available at:
   http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf
7. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework or England 2005/06.* Available at:
   http://www.ic.nhs.uk/webfiles/publications/qof/NationalQualityOutcomesFramework280906_PDF.pdf
8. The Health and Social Care Information Centre, *National Quality and Outcomes Framework Statistics for England 2004/05*. Available at:
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9. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at:
   http://www.biomedcentral.com/1471-2296/7/68
10. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
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    http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf
12. Tanday S. News: *Mental health QOF targets are intentionally difficult*, 2007. Available at:
    http://www.healthcarerepublic.com/news/GP/LatestNews/742216/Mental-health-QOF-targets-intentionally-difficult/

Updated: June 2011

Years of life lost due to mortality from suicide

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from suicide (ICD-10 X60-X84).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		31L_094CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		31L_094DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from suicide classified by underlying cause of death (ICD-10 X60-X84), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Brock A, Griffiths C. Trends in the mortality of young adults aged 15-44 in England and Wales, 1961-2001. *Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 22-31. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf
2. Griffiths C, Rooney C. The effect of the introduction of ICD-10 on trends in mortality from injury and poisoning in England and Wales. *Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 10-21. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf
3. Charlwood P, Mason A, Goldacre M, Cleary R, Wilkinson E. *Health Outcome Indicators: Severe Mental Illness. Report of a working group to the Department of Health*. Oxford: NCHOD, 1999. Available at: http://www.uhce.ox.ac.uk/hessepho/reports/CR8.pdf
4. Department of Health. *Saving Lives: Our Healthier Nation*. London: The Stationery Office, 1999.
5. Department of Health. *Health of the Nation - A Strategy for Health in England.* London: Her Majesty's Stationery Office, 1992.

Updated: March 2011

Years of life lost due to mortality from suicide and injury undetermined

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from suicide and injury undetermined (ICD-10 X60-X84, Y10-Y34 exc Y33.9).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		31M_099CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		31M_099DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from suicide and injury undetermined classified by underlying cause of death (ICD-10 X60-X84, Y10-Y34 exc Y33.9), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

   Annex 2: Changes to Office for National Statistics mortality data
   Annex 3: Explanations of statistical methods used in the *Compendium*
   Annex 5: European Standard Population

Interpretation of indicators:

   Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Brock A, Griffiths C. Trends in the mortality of young adults aged 15-44 in England and Wales, 1961-2001. *Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 22-31. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf
2. Griffiths C, Rooney C. The effect of the introduction of ICD-10 on trends in mortality from injury and poisoning in England and Wales. *Office for National Statistics Health Statistics Quarterly*, No. 19, 2003: 10-21. Available at: http://www.statistics.gov.uk/downloads/theme_health/HSQ19.pdf
3. Charlwood P, Mason A, Goldacre M, Cleary R, Wilkinson E. *Health Outcome Indicators: Severe Mental Illness. Report of a working group to the Department of Health*. Oxford: NCHOD, 1999. Available at: http://www.uhce.ox.ac.uk/hessepho/reports/CR8.pdf
4. Department of Health. *Saving Lives: Our Healthier Nation*. London: The Stationery Office, 1999.
5. Department of Health. *Health of the Nation - A Strategy for Health in England.* London: Her Majesty's Stationery Office, 1992.

Updated: March 2011

Comprehensive care plan for patients on mental health register

Purpose:

To help ensure high standards of primary health care and treatment delivered to NHS patients who have a serious mental illness.

Patients on the mental health register should have a documented primary care consultation that acknowledges, especially in the event of a relapse, a plan for care. This consultation may include the views of their relatives or carers where appropriate.

For the patients who have a serious mental illness and are seen in a primary care setting, it is important that the primary care team takes responsibility for discussing and documenting a care plan in their primary care record.

Definition of indicator and its variants:

Proportion of patients on the register who have a comprehensive care plan documented in the records agreed between individuals, their family and/or carers as appropriate.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		31N_666PC_10_V1

Numerator:

Numerator data - Patients on the mental health register who have a comprehensive care plan documented.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the mental health register excluding those for who have been exception reported. Patients may be exception reported for the following reasons:
- not included on the QOF mental health register / taken off that register;
- registered in the three months before the reference date;
- mental health exception reported in the 15 months before the reference date;
- diagnosed with psychosis / schizophrenia / bipolar affective disease in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1.   The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2.   NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
3.   The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
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6.   The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07.* Available at: http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf
7.   The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework or England 2005/06.* Available at: http://www.ic.nhs.uk/webfiles/publications/qof/NationalQualityOutcomesFramework280906_PDF.pdf
8.   The Health and Social Care Information Centre, *National Quality and Outcomes Framework Statistics for England 2004/05*. Available at: http://www.ic.nhs.uk/webfiles/publications/qof0405/QOF0405_Statistical_Bulletin.pdf
9.   Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68
10.   Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
11.   Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf
12.   Jamie G. QOF News: *The Crazy World of Mental Health*, 2007. Available at: http://www.gpcontract.co.uk/news/2007/01/crazy-world-of-mental-health.html

Updated: June 2011

Follow-up of non-attendance at annual review among patients with psychoses

Purpose:

To help reduce the level of risk to health for NHS patients with psychoses and ensure high standards of primary health care and treatment delivered to them.

Poor compliance with medication among patients with psychoses is well recognised. This may lead to relapse, hospitalisation and poorer outcomes. There is also evidence to suggest that non-attendance at appointments may be interpreted by some practices as part of having a serious mental illness, rather than recognising that not turning up for an appointment may be a sign of relapse.

This indicator requires proactive intervention from the practice to contact the patients and enquire about their health status.

Definition of indicator and its variants:

Proportion of patients with schizophrenia, bipolar affective disorder and other psychoses who do not attend the practice for their annual review who are identified and followed up by the practice team.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		31O_667PC_10_V1

Numerator:

Numerator data - Patients diagnosed with schizophrenia, bipolar affective disorder and other psychoses followed up by the practice team within 14 days (from the scheduled review date) of not attending invited mental health review.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients diagnosed with schizophrenia, bipolar affective disorder and other psychoses who did not attend invited mental health review excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- not included on the QOF mental health register / taken off that register;
- registered in the three months before the reference date;
- mental health exception reported in the 15 months before the reference date;
- diagnosed with psychosis / schizophrenia / bipolar affective disease in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a

particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
4. NHS Employers and General Practitioners Committee BMA. *Quality and Outcomes Framework guidance for GMS contract 2008/09*, April 2008. Available at: http://www.nhsemployers.org/SiteCollectionDocuments/QUALITY_OUT_COMPLETE_CD_110209.pdf
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7. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework or England 2005/06.* Available at: http://www.ic.nhs.uk/webfiles/publications/qof/NationalQualityOutcomesFramework280906_PDF.pdf
8. The Health and Social Care Information Centre, *National Quality and Outcomes Framework Statistics for England 2004/05*. Available at: http://www.ic.nhs.uk/webfiles/publications/qof0405/QOF0405_Statistical_Bulletin.pdf
9. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68
10. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
11. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf
12. Jamie G. QOF News: *The Crazy World of Mental Health*, 2007. Available at: http://www.gpcontract.co.uk/news/2007/01/crazy-world-of-mental-health.html

Updated: June 2011

Screening for depression in patients with diabetes and/or coronary heart disease

Purpose:

To ascertain the prevalence of depression in patients with diabetes and/or coronary heart disease from General Practice records and help ensure high standards of primary health care and treatment delivered to NHS patients.

Depression is more common in people with coronary heart disease (CHD) and presence of depression in people with CHD is associated with reduced compliance with treatment, increased use of health resources, increased social isolation, and poorer outcomes. Up to one third of patients develop depression after myocardial infarction. There is some evidence that depression is an independent rosk factor for mortality in people with CHD.

There is 24 per cent lifetime prevalence of co-morbid depression in individuals with diabetes mellitus, which is three times higher than the prevalence rate in the general population. A recent meta-analysis of 42 studies found that depression is clinically relevant in nearly one in three patients with diabetes. People with both diabetes and depression are less physically and socially active and less likely to comply with diet and treatment than people with diabetes alone, leading to worse long term complications and higher mortality. It may also be that practitioners provide poorer care to patients with co-morbid depression and diabetes because depression impairs communication with patients

Definition of indicator and its variants:

Proportion of adult patients with diabetes and/or heart disease in a GP registered population. for whom screening for depression has been undertaken on one occasion during the previous 15 months using two standard screening questions.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	18+	E, GOR, SHA, PCO	FY 2009/10		31P_668PC_10_V1

Numerator:

Numerator data – Patients on the diabetes and CHD registers for whom screening for depression has been undertaken during the previous 15 months.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the diabetes and CHD registers excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the three months before the reference date;
- depression exception reported in the 15 months before the reference date;
- included in the co-morbidity register more than three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator

to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
3. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2008/09*, September 2009. Available at: http://www.ic.nhs.uk/webfiles/QOF/2008-09/QOF%20Achievement%20and%20Prevalence%20Bulletin%202008-09.pdf
4. NHS Employers and General Practitioners Committee BMA. *Quality and Outcomes Framework guidance for GMS contract 2008/09*, April 2008. Available at: http://www.nhsemployers.org/SiteCollectionDocuments/QUALITY_OUT_COMPLETE_CD_110209.pdf
5. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Statistics for England 2007/08.* Available at: http://www.ic.nhs.uk/webfiles/QOF/2007-08/QOF%20200708%20Statistical%20Bulletin.pdf
6. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07.* Available at: http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf
7. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68
8. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
9. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf
10. McBride A. QOF Depression Study: *Treatment of depression according to severity*, 2007 Available at: http://www.mhrn.info/index/portfolio/recruitment/QOFDepressionStudy.html

Updated: October 2010

Depression severity assessment at outset of treatment

Purpose:

To help ensure high standards of primary health care and treatment delivered to NHS patients diagnosed with depression.

Assesment of depression severity is essential to decide on appropriate interventions and improve the quality of care. A measure of severity at the outset of treatment enables a discussion with the patient about relevant treatment interventions and options, guided by the stepped care model of depression.

The three optional severity measures validated for use in a primary care setting are the Patient Health Questionnaire (PHQ-9), the Beck Depression Inventory Second Edition (BDI-II) and the Hospital Anxiety and Depression Scale (HADS).

Recent research has shown that the use of severity measures is valued by patients and that doctors' treatment and referral rates are related to the scores on the measures.

Definition of indicator and its variants:

Proportion of adult patients with a new diagnosis of depression who have had an assessment of severity at the outset of treatment using an assessment tool validated for use in primary care. For the purposes of QOF measurement 'at the outset of treatment' is defined as within 28 days of the initial diagnosis.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	18+	E, GOR, SHA, PCO	FY 2009/10		31Q_669PC_10_V1

Numerator:

Numerator data - Patients with a new diagnosis of depression recorded between the preceding 1st April to 31st March whose notes record that they have had an assessment of severity at the outset of treatment (excluding women with postnatal depression).

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients diagnosed with depression excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- depression diagnosis recorded more than 12 months before the reference date;
- registered in the three months before the reference date;
- depression exception reported in the 15 months before the reference date;
- depression diagnosis recorded in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator

to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1.	The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2.	NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
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6.	The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf
7.	Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68
8.	Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
9.	Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf
10.	McBride A. QOF Depression Study: *Treatment of depression according to severity*, 2007 Available at: http://www.mhrn.info/index/portfolio/recruitment/QOFDepressionStudy.html

Updated: June 2011

Further assessment of depression severity

Purpose:

To help ensure high standards of primary health care and treatment delivered to NHS patients diagnosed with depression.

The rationale for such follow-up measurement is derived from the recognition that depression is often a chronic disease, yet treatment is often episodic and short-lived. If treatment with antidepressants is initiated, then patients should be being followed up regularly for several months. Early cessation of treatment is associated with a greater risk of relapse

Recent research into the use of severity measures has shown that patients whose GPs used the measures for follow-up in addition to initial assessment valued having repeated scores to help monitor their progress and assess the effectiveness of treatment.

Definition of indicator and its variants:

Proportion of adult patients with a new diagnosis of depression who have had a further assessment of severity 5-12 weeks (inclusive) after the initial recording of the assessment of severity using an assessment tool validated for use in primary care.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	18+	E, GOR, SHA, PCO	FY 2009/10		31R_679PC_10_V1

Numerator:

Numerator data - Patients with a new diagnosis of depression made between the preceding 1st April to 31st March whose notes record that they have had an assessment of severity 5-12 weeks (inclusive) after the initial recording of the assessment of severity related to a new diagnosis of depression. To be included in the numerator for this indicator a patient needs to have had both an initial and a subsequent severity assessment.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

This is a new indicator. For more details see 'QOF Changes and New Indicators for 2009/10' available at: http://www.bma.org.uk/images/QOFchanges200910_tcm41-178932.pdf

Denominator:

Denominator data - All patients diagnosed with depression excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- depression diagnosis recorded before 1st April 2009;
- depression diagnosis recorded more 68 weeks before the reference date;
- depression diagnosis recorded within 16 weeks from the reference date and with no recording of a second depression assessment;
- second depression assessment recorded 12 months before the reference date;
- registered in the three months before the reference date;
- depression exception reported in the 15 months before the reference date;
- depression diagnosis recorded in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
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6. The Information Centre for health and social care, Prescribing Support Unit. *National Quality and Outcomes Framework Statistics for England 2006/07*. Available at: http://www.ic.nhs.uk/webfiles/QOF/2006-07/QOF%202006-07%20Statistical%20Bulletin.pdf
7. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68
8. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
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10. McBride A. QOF Depression Study: *Treatment of depression according to severity*, 2007 Available at: http://www.mhrn.info/index/portfolio/recruitment/QOFDepressionStudy.html

Updated: June 2011

Prevalence: depression

Purpose:

To ascertain the prevalence of depression from General Practice records and help ensure high standards of primary health care and treatment delivered to NHS patients.

Depression is common and disabling. The estimated point prevalence for major depression among 16-65 year olds in the UK is 21/1000 (males 17, females 25). Mixed anxiety and depression is prevalent in a further 10 per cent of adult patients attending general practices. It contributes 12 per cent of the total burden of non-fatal global disease and by 2020, looks set to be second after cardiovascular disease in terms of the world's disabling diseases. Major depressive disorder is increasingly seen as chronic and relapsing, resulting in high levels of personal disability, lost quality of life for patients, their family and carers, multiple morbidity, suicide, higher levels of service use and many associated economic costs.

Definition of indicator and its variants:

Proportion of adult patients diagnosed with depression.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	18+	E, GOR, SHA, PCO	FY 2009/10		31S_680PC_10_V1

Numerator:

Numerator data - Patients registered with GP practices with a coded diagnosis of depression.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

Denominator:

Denominator data - All patients aged 18 and over registered with GP practices (estimated age-banded practice list size).

Source of denominator data - See "Numerator data".

Comments on denominator data - Age-banded practice list sizes were obtained from the Prescription Services Division (RxS) of the NHS Business Services Authority.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

From 2009 onwards, National Prevalence Day has been moved to 31st March (previously 14th February) so that prevalence is calculated on the same basis as disease registers for indicator denominators.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
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7. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004-5, *BMC Family Practice*, London: Ashworth and Armstrong, 2006 7:68. Available at: http://www.biomedcentral.com/1471-2296/7/68
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9. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf
10. McBride A. QOF Depression Study: *Treatment of depression according to severity*, 2007 Available at: http://www.mhrn.info/index/portfolio/recruitment/QOFDepressionStudy.html

Updated: June 2011

Prevalence: dementia

Purpose:

To ascertain the prevalence of dementia from General Practice records and help ensure high standards of primary health care and treatment delivered to NHS patients.

Dementia is a syndrome characterised by catastrophic, progressive global deterioration in intellectual function and is a main cause of late-life disability. The prevalence of dementia increases with age and is estimated to be approximately 20 per cent at 80 years of age. In a third of cases, dementia is associated with other psychiatric symptoms such as depressive disorder, adjustment disorder, generalised anxiety disorder and alcohol related problems.

Definition of indicator and its variants:

Proportion of patients with dementia in a GP registered population. This definition applies to all patients diagnosed with dementia either directly by the General Practitioner or through referral to secondary care.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		41A_664PC_10_V1

Numerator:

Numerator data - Patients registered with GP practices with a coded diagnosis of dementia.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

Denominator:

Denominator data - All patients registered with GP practices (total practice list size).

Source of denominator data - See "Numerator data".

Comments on denominator data - The practice list sizes are supplied to QMAS from the National Health Applications and Infrastructure Services (NHAIS).

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

From 2009 onwards, National Prevalence Day has been moved to 31st March (previously 14th February) so that prevalence is calculated on the same basis as disease registers for indicator denominators.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2. NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
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10. Gloucestershire Primary and Community Care Audit Group, Dementia, 2007. Available at: http://www.glospccag.nhs.uk/pccag188997.html

Updated: June 2011

Care review among patients with dementia

Purpose:

To help ensure high standards of primary health care and treatment delivered to NHS patients diagnosed with dementia

The face to face dementia review should focus on support needs of the patients and their carers. As the illness progresses, and more agencies are involved, the review should additionally focus on assessing the communication between health and social care and non-statutory sectors as appropriate, to ensure that potentially complex needs are addressed. Communication and referral issues highlighted in the review need to be followed up as part of the review process.

Definition of indicator and its variants:

Proportion of patients diagnosed with dementia whose care has been reviewed in the previous 15 months.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		41B_665PC_10_V1

Numerator:

Numerator data - Patients on the dementia register who have had their care review recorded in the 15 months before the reference date.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the dementia register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the three months before the reference date;
- dementia exception reported in the 15 months before the reference date;
- dementia diagnosis recorded in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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Updated: June 2011

Emergency hospital admissions and timely surgery: fractured proximal femur

Purpose:

The purpose of the indicator is to help monitor National Health Service (NHS) success in prevention and treatment of fractured proximal femur. This is a serious condition causing pain and immobility, requiring hospitalisation. Mortality is high, with approximately one in five patients with the fracture being dead within one year. Some fractures are potentially preventable through interventions aimed either at whole populations (e.g. reducing smoking rates, promoting better nutrition and higher levels of physical activity) or at people at risk of having a fracture. The latter include timely identification of those at risk (e.g. those with osteoporosis, likelihood of having an accident) and management of risk e.g. medication, home safety, mobility aides, padded clothing etc.

Observational studies of surgical outcomes associated with fractured proximal femur have suggested that where there is a significant delay from admission to surgery, there is an increased risk of morbidity, complications, and poor rehabilitation. Guidelines from the Royal College of Physicians have specified that operations for fractured proximal femur should normally occur within 24 hours of admission. However, it is acknowledged that delayed surgery may be more a reflection of patients with other medical conditions making them unfit for surgery than of inadequate management. Whatever the reason for delayed surgery, it is a proxy for poorer outcomes.

The NHS may be helped to learn lessons from organisations with lower rates of hospitalisation and higher rates of timely surgery following fractured proximal femur.

Definition of indicator and its variants:

(i) Emergency admissions to hospital of persons with fractured proximal femur.

(ii) Relevant surgery within the first two days following emergency admissions to hospital of persons with fractured proximal femur.

Statistic	Sex	Age group	Organisation	Period		File_worksheet name
			(see glossary)	Current data	Trend data	
Indirectly age and sex-standardised rate per 100,000 (standardised to FY 2005/06)	P F M	All Ages	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County, LA (boundaries as at April 2009); PCO (boundaries as at October 2006); CTY.	FY 2008/09	FY 2002/03, FY 2003/04, FY 2004/05, FY 2005/06, FY 2006/07, FY 2007/08	32A_020ISR7DP_09_V1 32A_020ISR7DF_09_V1 32A_020ISR7DM_09_V1
Indirectly age and sex-standardised rate per 100,000 (standardised to FY 2005/06)	P F M	All Ages	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County, LA (boundaries as at April 2009); PCO (boundaries as at October 2006); CTY.	FY 2008/09	FY 2002/03, FY 2003/04, FY 2004/05, FY 2005/06, FY 2006/07, FY 2007/08	32A_020ISP7DP_09_V1 32A_020ISP7DF_09_V1 32A_020ISP7DM_09_V1

Numerator:

Numerator data – (i) The number of finished and unfinished continuous inpatient (CIP) spells, excluding transfers, for patients of all ages with an emergency method of admission and with any of the following primary diagnoses (DIAG_01in the 1st episode of the spell, ICD 10 codes) in the respective financial year:

Fractured proximal femur

- S72.0 Fracture of neck of femur;
- S72.1 Pertrochanteric fracture;
- S72.2 Subtrochanteric fracture.

The following fields and values are used for the numerator:

The first episode in the CIP spell has:
> DIAG_01 in the valid list for this indicator (primary diagnosis);
> AND ADMISORC not = 51, 52 or 53 (admission source);
> AND EPITYPE = 1 (episode type);
> AND SEX = 1 or 2 (sex);
> AND EPIORDER = 1 (episode order);
> AND ADMIMETH = 21, 22, 23, 24 or 28 (admission method);
> AND EPISTART is >= 01/04/YYYY and EPISTART <= 31/03/YYYY+1 (episode start date within year);
> AND CLASSPAT = 1 (patient classification);
> AND STARTAGE is 0-120 or 7001-7007 (age at start of episode);
> AND DOB not 01/01/1900 or 01/01/1901 (date of birth).

Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
> SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Counts are by:
> age / sex / organisation of residence in CIP spell (values for England are aggregates of these)

where:
> age bands <1, 1-4, 5-9, … , 80-84, 85+;
> sex is 1, 2 (male and female).

Numerator data – (ii) The number of continuous inpatient spells (CIPS) selected for the numerator of (i), where the patient undergoes relevant surgery between 0-1 days (inclusive) of the date of admission in the respective financial year (OPCS 4 codes found in any of the operation fields in any episode in a CIP spell).

- W19.1   Primary open reduction of fracture of neck of femur and open fixation using pin and plate;
- W24.1   Closed reduction of intracapsular fracture of neck of femur and fixation using nail or screw;
- W19.2+Z76.2   Primary open reduction of fracture of long bone and fixation using rigid nail NEC + Neck of femur;
- W19.3+Z76.2   Primary open reduction of fracture of long bone and fixation using flexible nail + Neck of femur;
- W24.2+Z76.2   Closed reduction of fracture of long bone and rigid internal fixation NEC + Neck of femur;
- W19.2+Z76.3   Primary open reduction of fracture of long bone and fixation using rigid nail + Trochanter of femur;
- W19.3+Z76.3   Primary open reduction of fracture of long bone and fixation using flexible nail + Trochanter of femur;
- W24.2+Z76.3   Closed reduction of fracture of long bone and rigid internal fixation NEC + Trochanter of femur;
- W37.1   Primary total prosthetic replacement of hip joint using cement;
- W38.1   Primary total prosthetic replacement of hip joint not using cement;
- W39.1   Primary total prosthetic replacement of hip joint NEC;
- W46.1   Primary prosthetic replacement of head of femur using cement;
- W46.2   Conversion to prosthetic replacement of head of femur using cement;
- W47.1   Primary prosthetic replacement of head of femur not using cement;
- W47.2   Conversion to prosthetic replacement of head of femur not using cement;
- W48.1   Primary prosthetic replacement of head of femur nec;
- W48.2   Conversion to prosthetic replacement of head of femur NEC;
- W93.1   Primary hybrid prosthetic replacement of hip joint using cemented acetabular component;
- W94.1   Primary hybrid prosthetic replacement of hip joint using cemented femoral component;
- W95.1   Primary hybrid prosthetic replacement of hip joint using cement NEC;

The date of the first eligible procedure in any operation field, and the episode start date from the first episode in a CIP spell, are used to determine the interval between admission and the operation. Where the operation date is missing or invalid, it is assumed that the procedure takes place one day after the start of the episode containing the procedure. If the episode start date is not valid then it is assumed the procedure took place one day after the admission date of the spell. If this is still not valid, then the date is left blank. If the procedure date is before the start of the CIP spell, then the spell is not included in the numerator.

Source of numerator data - (i) and (ii) Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year. England, The NHS Information Centre for health and social care.

Comments on numerator data - It is important, for the purposes of measuring incidence, to count persons as opposed to episodes of care, as each person with the condition should only be counted once during each admission. This is done by counting CIP spells (epiorder 1) only. Some transfers which are also coded epiorder 1 and emergency could lead to double counting. In order to avoid this, spells which have an admisorc of 51-53, indicating a transfer from another NHS Trust, are excluded.

Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March. In order to avoid double counting that spell in both financial years, only spells which started during the financial year of analysis are counted.

Deaths in the community prior to admission are not included, nor are patients who get treated in the community, as data about them are not available.

Emergency method of admission and primary diagnosis are used to distinguish between new fractures and either readmission for the same problem previously treated in hospital or a fracture occurring in hospital. However, there could be double counting if the readmission is coded as an emergency and has the same primary diagnosis.

Spells are attributed to the organisation of residence, based on the numerator.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). These show the proportion of diagnoses not coded. There may be variation between hospitals in the way that they code diagnoses to the fourteen diagnosis fields in each episode, particularly primary diagnosis. For instance, they may code in the order in which diagnoses were made, or according to the perceived importance or complexity. This may affect whether a particular spell is selected for inclusion in the numerator of this indicator.

Individual spells may contain more than one eligible procedure but are only counted once. Alternatively, a single person may have a second eligible spell (for a second fracture) within the same year. Separate spells for an individual during the same year are counted separately in the numerators.

Denominator:

Denominator data – (i)   The denominator is the resident population for the respective organisation.

Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at September 2009.

For further details on revisions to ONS mid-year population estimates, and their availability, see the comments in the specification for the 'Estimates of resident population' indicator.

Counts are by:
age / sex / organisation of residence (values for England are aggregates of these)

where:
age bands are <1, 1-4, 5-9, … , 80-84, 85+;
sex is 1, 2 (male and female).

Denominator data – (ii) The denominator is the numerator for indicator (i).

Source of denominator data – (i) Office for National Statistics.

(ii)   Hospital Episode Statistics (HES) for the respective financial year, England, The NHS Information Centre for health and social care.

Comments on denominator data – see comments on the numerator for indicator (i).

Statistical Methods:

The indicator is indirectly standardised by age and sex. The person-based rate is standardised by age and sex using England age and sex rates as standards. The gender-specific rates are standardised by age using person-based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age and sex of its patients.

This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in admission rate (i), or timely procedure rate (ii), from a previous year plus the statistical significance of these changes, have also been calculated. For both indicators a positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator **-** This is a condition-specific, cross-sectional annual comparative indicator, acting as a proxy for outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator – Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals **-** Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation and Local Authority level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence interval overlaps the national rate, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity **-** A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may determine whether a patient gets admitted or not and may influence rates. Differences in case-mix (beyond that accounted for by standardisation), concurrent illnesses and other potential risk factors also contribute to the variation. Current data do not allow assignment of severity of illness across continuous inpatient spells, nor do they allow adjustment for any of these factors. We have tried to deal with this constraint partially by presenting the data in clusters that are similar with respect to organisation type. Gender specific data standardised to person rates are available.

Other potential confounding factors **-** The patterns of providing care may vary between organisations in terms of: extent of treatment in primary care settings; referral policies and practices; hospital outpatient facilities/walk-in clinics; and hospital inpatient admission policies and practices.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess the extent to which admissions were potentially avoidable are recommended.

Relevant national initiatives:

These indicators were recommended as part of a feasibility study of population health outcome indicators undertaken for the Department of Health by the Faculty of Public Health Medicine, as well as by a working group on health outcomes of fractured proximal femur, set up by the Department of Health. The National Service Framework for Older People contains standards and guidelines for the prevention and treatment of fractured proximal femur.

Further reading

1. Department of Health. *National service framework for older people.* London: Department of Health, 2001.
2. Fairbank J, Goldacre M, Mason A, Wilkinson E, Fletcher J, Amess M, Eastwood A, Cleary R (eds). *Health Outcome Indicators: Fractured Proximal Femur.* Report of a working group to the Department of Health. Oxford: National Centre for Health Outcomes Development, 1999.
3. Frostick S. HunterJB. Complications. In *Outcome measures in orthopaedics* (ed. P.Pynsent, J Fairbank, A. Carr) pp 81-93. Butterworth-Heinemann. Oxford. 1993.

4. Holmberg S, Kalen R, Throngren KG. Treatment and outcome of femoral neck fractures: an analysis of 2418 patients admitted from their own homes. *Clinical Orthopaedics & Related Research* 1987; 218: 42-52.
5. McColl A J, Gulliford M C. *Population Health Outcome Indicators for the NHS – A Feasibility Study*. London: Faculty of Public Health Medicine, 1993.
6. Royal College of Physicians. *Fractured neck of femur: prevention and management*. Royal College of Physicians. London. 1989.
7. Villar RN, Allen SM, Barnes SJ. Hip fractures in healthy patients: operative delay versus prognosis. *British Medical Journal* 1986; 293: 1203-04.
8. Zukerman JD, Skorron ML, Koval KJ, Aharonoff G, Frankel VH. Post-operative complications and mortality associated with operative delay in older patients who have a fracture of the hip. *Journal of Bone and Joint Surgery* 1995;77-A: 1551-56.

Updated: November 2010

Mortality from fracture of femur

Purpose:

To reduce deaths from fracture of femur.

Definition of indicator and its variants:

Mortality from fracture of femur (neck and other than neck) (ICD-10 S72 equivalent to ICD-9 820-82).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <75, 65-84, 85+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		32B_025SM00++_09_V1 32B_025SM0074_09_V1 32B_025SM6584_09_V1 32B_025SM85++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <75, 65-84, 85+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		32B_025DR00++_09_V1 32B_025DR0074_09_V1 32B_025DR6584_09_V1 32B_025DR85++_09_V1

Numerator:

Numerator data - Deaths from fracture of femur, classified by nature of injuries (N cause) (ICD-10 S72), registered in the respective calendar years.

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

N cause data for fracture of the femur should be used with great care because of the effects of artefactual local differences resulting from variations in certification procedures between coroners. Deaths caused by fracture of the femur are also under-recorded because there are a number of alternatives for classifying such deaths. For these reasons, variations between areas should be interpreted with caution.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Fairbank J, Goldacre M, Mason A, Wilkinson E, Fletcher J, Amess M, Eastwood A, Cleary R (eds). *Health Outcome Indicators: Fractured Proximal Femur. Report of a working group to the Department of Health*. Oxford: National Centre for Health Outcomes Development, 1999. Available at: http://www.uhce.ox.ac.uk/hessepho/reports/CR5.pdf

Updated: March 2011

Deaths within 30 days of emergency admission to hospital: fractured proximal femur

Purpose:

Fractured proximal femur can accelerate death. Variations in death rates for fractured proximal femur between 'like' populations suggest that some of these deaths are potentially avoidable. The National Health Service (NHS) may be helped to prevent some of these deaths by seeing comparative figures and learning lessons from follow-up investigations.

Definition of indicator and its variants:

Deaths occurring in hospital and after discharge between 0 and 29 days (inclusive) of an emergency admission to hospital with fractured proximal femur.

Statistic	Sex	Age group	Organisation	Period		File-worksheet name
			(see glossary)	Current data	Trend data	
Indirectly age and sex-standardised rate per 100,000 (standardised to 2004/05)	P F M	All Ages	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County; LA (boundaries as at April 2009); PCO (boundaries as at October 2006); deprivation group (5, 7 bands);Trust Cluster; Trust.	FY 2008/09	FY 1999/00, FY 2000/01, FY 2001/02, FY 2002/03, FY 2003/04, FY 2004/05, FY 2005/06, FY 2006/07, FY 2007/08	32C_213ISR2AP_09_V1 32C_213ISR2AF_09_V1 32C_213ISR2AM_09_V1

Numerator:

Numerator data - The number of denominator continuous inpatient (CIP) spells i.e. spells following emergency admission for patients of all ages with a primary diagnosis on admission of fractured proximal femur (ICD 10 codes S72.0, S72.1, S72.2), where the patient dies in hospital or after discharge between 0-29 days (inclusive) of admission in the respective financial year.

Deaths that occur outside hospital following discharge but between 0-29 days of admission are included. This was achieved through linkage of HES data with deaths data from the Office for National Statistics (ONS). Records of all deaths which occurred in England during the period of analysis for each indicator plus 30 days after were obtained from ONS. Linkage was undertaken using the most recent CIP denominator spell for each person discharged alive.

The date of admission, and the date and method of discharge from the last episode in the CIP spell (or HES/ONS linked data), are used to determine the interval between admission and death.

The numerator is the number of denominator CIP spells with the following fields and values:

The last episode in CIP spell (or HES/ONS linked*) has:
DISMETH* = 4 (discharge method);
AND DISDATE* minus ADMIDATE (first episode) = 0-29 days inclusive (discharge date and admission date).

The Fields used from the first episode in a spell where there is a valid patient postcode allowing derivation of the following organisation of residence codes include:
SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Fields used from the first episode in a spell include:
PROCODETC (provider code, unmapped). Provider clusters are aggregates of the PROCODETC field.

Counts are by:
 age / sex / organisation of residence in CIP spell (values for England are aggregates of these)

where:
 age bands are <1, 1-4, 5-9, … , 80-84, 85+;
 sex is 1, 2 (male and female).

Source of numerator data - Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year, plus those up to 30 days in the next financial year, England, The NHS Information Centre for health and social care; and the Office for National Statistics.

Comments on numerator data - Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). The selected diagnosis and death can occur in separate episodes and even in separate hospitals after transfer. A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March.

The indicator includes deaths occurring after transfer to another Trust. For residence based aggregations, deaths are counted to the first valid organisation coded in the spell; for provider based aggregations, (Provider Trusts and Clusters) deaths are counted to the first valid organisation coded in the spell.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details)*.

Denominator:

Denominator data - The number of finished continuous inpatient spells following an emergency admission for patients of all ages with a primary diagnosis on admission of fractured proximal femur (ICD 10 codes S72.0, S72.1, S72.2):

- S72.0 Fracture of neck of femur;
- S72.1 Pertrochanteric fracture;
- S72.2 Subtrochanteric fracture.

The following fields and values are used for the denominator:

 The first episode in the CIP spell has:
  DIAG_01 in the valid list for this indicator (primary diagnosis);
  AND EPIORDER = 1 (episode order);
  AND EPITYPE = 1 (episode type);
  AND ADMIMETH = 21, 22, 23, 24 or 28 (admission method);
  AND ADMISORC is not 51, 52 or 53 (admission source);
  AND EPISTART is valid and >= 01/04/YYYY and <= 31/03/YYYY+1 (episode start date);
  AND CLASSPAT = 1 (patient classification);
  AND STARTAGE is either 0-120 or 7001-7007 (age at start of episode);
  AND SEX = 1 or 2 (sex);
  AND EPISTAT = 3 (episode status);
  AND DOB not 01/01/1900 or 01/01/1901 (date of birth).

 AND the last episode in the CIP spell (or HES/ONS linked*) has:
  DISMETH* = 1-4 (discharge method);
  AND DISDATE* is valid (discharge date).

 Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
  SPELLRESPCTC, SPELLRESLADSTC. SPELLRESSTHAC Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

 Fields used from the first episode in a spell include:
  PROCODETC (provider code, unmapped). Provider clusters are aggregates of the PROCODETC field.

 Counts are by:
  age / sex / organisation of residence in CIP spell (values for England are aggregates of these)

 where:
  age bands are <1, 1-4, 5-9, … , 80-84, 85+;
  sex is 1, 2 (male and female).

Source of denominator data - Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year, England, The NHS Information Centre for health and social care.

Comments on denominator data - There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). There may also be variation between hospitals in the way that they code diagnoses to the fourteen diagnosis fields in each episode, particularly primary diagnosis. For instance, they may code in the order in which the diagnoses were made, or according to their perceived importance or complexity. This may affect whether a particular spell is selected for inclusion in this indicator.

Statistical Methods:

The indicator is indirectly standardised by age and sex. The person-based rate is standardised by age and sex using England age and sex rates as standards. The gender-specific rates are standardised by age using person-based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age and sex of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in rates from a previous year, plus the statistical significance of this change, have also been calculated. A positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator - This is a condition-specific, cross-sectional annual comparative indicator of outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator - Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation, Local Authority and provider Trust level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence interval overlaps the national rate, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity - A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation (particularly deaths before admission), may contribute to the variation shown by the indicators. Differences in case-mix (beyond that accounted for by standardisation), severity of the fracture, comorbidities and other potential risk factors also contribute to the variation. Current data do not allow assignment of severity of illness across continuous inpatient spells, nor do they allow adjustment for these factors. This may pose less of a constraint at geographical organisation level than at hospital level. We have tried to deal with this constraint partially by presenting the data in clusters that are similar with respect to institution or organisation type. Gender-specific data standardised to person rates as well as analyses at England level by the Index of Multiple Deprivation are presented.

Other potential confounding factors - The patterns of providing care may vary between organisations in terms of: extent of prevention and treatment in primary care settings; referral policies and practices; and hospital admission policies and practices. Variation between hospitals in average length of stay may also lead to variation between hospitals in the proportion of deaths occurring in hospital as opposed to in the community after discharge from hospital.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess the extent to which deaths were linked to the fracture, and therefore truly represent potentially avoidable adverse events, are recommended.

Relevant national initiatives:

This indicator is among those recommended by a Working Group on Outcome Indicators for fractured proximal femur, set up to advise the Department of Health on new indicators. The indicator has been used by the Department of Health in NHS Performance Indicators between 1999 and 2002. It has also been used for international comparisons.

Further reading:

1. Carroll JG. *Monitoring with Indicators: Evaluating the Quality of Patient Care*. Maryland: Aspen Publications, 1992.
2. Commission on Professional and Hospital Activities. *Hospital Wide Quality Indicators*. Ann Arbor, 1991.
3. CRAG Clinical Outcomes Working Group. *Clinical Outcome Indicators*. Edinburgh: The Scottish Office, 1994.
4. Department of Health. NHS Performance Indicators: February 2002. London: Department of Health, 2002.
Fairbank J, Goldacre M, Mason A, Wilkinson E, Fletcher J, Amess M, Eastwood A, Cleary R (eds). *Health Outcome Indicators: Fractured Proximal Femur*. Report of a working group to the Department of Health. Oxford: National Centre for Health Outcomes Development, 1999 (www.nchod.nhs.uk).

Updated: November 2010

Returning to usual place of residence following hospital treatment: fractured proximal femur

Purpose:

In the absence of routine data on patient levels of function and well-being, a return to usual residence following a fractured proximal femur may act as a proxy for successful outcome of rehabilitation. The category of accommodation as coded in Hospital Episode Statistics (HES) data is used as a proxy for place of residence. Although the proportion of those who return to pre-fracture category of accommodation will depend partly on the availability of support at home and the quality of community services, a change in the category of accommodation may suggest an important change in functional ability and health status. There are variations between 'like' populations in the proportions who return to usual residence. The National Health Service (NHS) may be able to avoid unnecessarily prolonged hospital stays by learning lessons from the experience of others, and alerting those with responsibility for social care about problems.

The 28 day cut-off was selected based on comments on the NHS Executive's consultation document on Clinical Indicators (1997).

Definition of indicator and its variants:

Proportion of patients of all ages discharged back to usual place of residence within 28 days of emergency admission to hospital with fractured proximal femur.

Statistic	Sex	Age group	Organisation	Period		File-worksheet name
			(see glossary)	Current data	Trend data	
Indirectly age and sex-standardised percent (standardised to 2004/05)	P F M	All Ages	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County; LA (boundaries as at April 2009); PCO (boundaries as at October 2006); NHS provider Trusts (as during financial year); provider clusters; deprivation group (5, 7 bands)	FY 2008/09	FY 1999/00, FY 2000/01, FY 2001/02, FY 2002/03, FY 2003/04, FY 2004/05, FY 2005/06, FY 2006/07, FY 2007/08	32E_251ISP6P_09_V1 32E_251ISP6F_09_V1 32E_251ISP6M_09_V1

Numerator:

Numerator data - The number of denominator continuous inpatient (CIP) spells i.e. spells following emergency admission for patients of all ages with a primary diagnosis on admission of fractured proximal femur (ICD 10 codes S72.0, S72.1, S72.2) where the patient is discharged to a specified category of accommodation between 0 and 27 days (inclusive) of admission.

The date and source of admission from the first episode in the CIP spell; and the date, method and destination of discharge from the last episode in the CIP spell; are used to determine the interval between admission and discharge, and whether the patient was discharged to the usual place of residence at the end of the CIP spell.

The numerator is the number of denominator CIP spells with the following fields and values:

        The last episode in CIP spell has:
                DISMETH = 1-3 (discharge method);
                AND Last episode in CIP spell DISDATE minus first episode in CIP spell EPISTART = 0-27 days inclusive (discharge date and episode start date);
                AND there is a match between first episode in CIP spell ADMISORC and last episode in CIP spell DISDEST as follows (admission source and discharge destination):
                        (DISDEST="19")
                        Or (ADMISORC="29" And DISDEST="29")
                        Or (ADMISORC="30" And DISDEST="30")

Or ((ADMISORC="37" Or ADMISORC="38" Or ADMISORC="39") And (DISDEST="37" Or DISDEST="38" Or DISDEST="39"))
Or (ADMISORC="48" And DISDEST="48")
Or (ADMISORC="50" And DISDEST="50")
Or (ADMISORC="54" And DISDEST="54")
Or ((ADMISORC="65" Or ADMISORC="66" Or ADMISORC="69") And (<DISDEST="65" Or DISDEST="66" Or DISDEST="69"))
Or (ADMISORC="84" And DISDEST="84")
Or (ADMISORC="85" And DISDEST="85")
Or (ADMISORC="86" And DISDEST="86")
Or (ADMISORC="88" And DISDEST="88")
Or (ADMISORC="89" And DISDEST="89")
Or (ADMISORC="89" And (DISDEST="85" Or DISDEST="86" Or DISDEST="88"))
Or ((ADMISORC="85" Or ADMISORC="86" Or ADMISORC="88") And DISDEST = "89").

Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence code include:
SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Fields used from the first episode in a spell include:
PROCODETC (provider code, unmapped). Provider clusters are aggregates of the PROCODETC field.

Counts are by:
age / sex / organisation of residence in CIP spell (values for England are aggregates of these)

where:
age bands are <1, 1-4, 5-9, … , 80-84, 85+;
sex is 1, 2 (male and female).

Source of numerator data - Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year, plus those up to 30 days in the next financial year, England, The NHS Information Centre for health and social care.

Comments on numerator data - Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March.

The indicator includes discharges occurring after transfer to another Trust. Discharges are counted to the first valid organisation coded in the spell.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details).

Denominator:

Denominator data - The number of finished CIP spells following an emergency admission within the respective financial year for patients of all ages with a primary diagnosis on admission of fractured proximal femur (ICD 10 codes S72.0, S72.1, S72.2). The denominator also excludes CIP spells where the first episode in the spell has an admission source coded other than specified (see below).

- S72.0 Fracture of neck of femur;
- S72.1 Pertrochanteric fracture;
- S72.2 Subtrochanteric fracture.

The following fields and values are used for the denominator:

The first episode in the CIP spell has:
DIAG_01 in the valid list for this indicator (primary diagnosis);
AND ADMISORC = 19, 29, 39, 54, 65, 66, 69, 84, 85, 86, 88 or 89 up to the end of the 98/99 financial year, and = 19, 29, 30, 37, 38, 39, 48, 50, 54, 65, 66, 69, 84, 85, 86, 88 or 89 afterwards (admission source);
AND EPITYPE = 1 (episode type);
AND SEX = 1 or 2 (sex);
AND EPIORDER = 1 (episode order);

AND ADMIMETH = 21, 22, 23, 24 or 28 (admission method);
AND EPISTART is valid and between 01/04/YYYY and 31/05/YYYY+1 (episode start date);
AND CLASSPAT = 1 (patient classification);
AND STARTAGE is either 0-120 or 7001-7007 (age at start of episode);
AND EPISTAT = 3 (episode status);
AND DOB not 01/01/1900 or 01/01/1901 (date of birth).

AND the last episode in the CIP spell has:
DISDATE is valid (discharge date);
AND DISMETH = 1, 2, 3 or 4 (discharge method).

Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Fields used from the first episode in a spell include:
PROCODETC (provider code, unmapped). Provider clusters are aggregates of the PROCODETC field.

Counts are by:
age / sex / organisation of residence in CIP spell (values for England are aggregates of these)

where:
age bands are <1, 1-4, 5-9, … , 80-84, 85+;
sex is 1, 2 (male and female).

Source of denominator data - Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year, England, The NHS Information Centre for health and social care.

Comments on denominator data - There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). Quality of coding shows the proportion of diagnoses not coded. There may also be variation between hospitals in the way that they code diagnoses to the fourteen diagnosis fields in each episode, particularly primary diagnosis. For instance, they may code in the order in which the diagnoses were made, or according to their perceived importance or complexity. This may affect whether a particular spell is selected for inclusion in this indicator.

Statistical Methods:

The indicator is indirectly standardised by age and sex. The person-based rate is standardised by age and sex using England age and sex rates as standards. The gender-specific rates are standardised by age using person-based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age and sex of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in rates from a previous year, plus the statistical significance of this change, have also been calculated. A positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator - This is a condition-specific, cross-sectional annual comparative indicator, acting as a proxy for outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator - Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation, Local Authority and provider Trust level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence interval overlaps the national rate, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity - A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may contribute to the variation shown by the indicators. Differences in case-mix (beyond that accounted for by standardisation), severity of the fracture, comorbidities and other potential risk factors also contribute to the variation. Current data do not allow assignment of severity of illness across continuous inpatient spells, nor do they allow adjustment for any of these factors. This may pose less of a constraint at geographical organisation level than at hospital level. We have tried to deal with this constraint by presenting the data in clusters that are similar with respect to institution or organisation type. Gender-specific data standardised to person rates as well as analyses at England level by the Index of Multiple Deprivation are presented.

Other potential confounding factors - A continuous inpatient spell may include transfers to other hospitals, e.g. for rehabilitation. The patterns of providing care may vary between NHS hospital Trusts in terms of whether patients are transferred elsewhere for rehabilitation and convalescence before final discharge. Planned transfers, for example for rehabilitation, may extend length of stay and affect discharge destination figures.

Levels of primary, social, and community care and family support may have implications for the ability of a hospital to discharge patients. The indicator may help to highlight such constraints and thereby reduce unnecessarily prolonged hospital stay. Some patients may not be ready for discharge within four weeks, needing further rehabilitation. The data in the indicator could be supplemented, at local level, with data on levels of function, disability, handicap etc.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess the reasons for any observed local prolonged stay are recommended.

Relevant national initiatives:

This indicator was part of the NHS Performance Indicators published by the Department of Health up to 2002. A working group set up to recommend outcome indicators for fractured proximal femur has now reported to the Department of Health.

Further reading:

1. CRAG Clinical Outcomes Working Group. *Clinical Outcome Indicators*. Edinburgh: The Scottish Office, 1994.
2. Central Health Outcomes Unit and Statistics Division SD2 HES. *Clinical Indicators for the NHS (1994-95)*. London: NHS Executive, 1997.
3. Department of Health. *NHS Performance Indicators: 2002*. London: Department of Health, 2002.
4. Fairbank J, Goldacre M, Mason A, Wilkinson E, Fletcher J, Amess M, Eastwood A, Cleary R (eds). *Health Outcome Indicators: Fractured Proximal Femur. Report of a working group to the Department of Health.* Oxford: National Centre for Health Outcomes Development, 1999 (www.nchod.nhs.uk).

Updated: November 2010

Emergency readmissions to hospital within 28 days of discharge: fractured proximal femur

Purpose:

To help monitor National Health Service (NHS) success in avoiding (or reducing to a minimum) readmission following discharge from hospital, when readmission was not part of the originally planned treatment. Previous analyses have shown that around 9% of patients discharged from NHS hospitals following emergency admission with a fractured proximal femur (hip) are readmitted as an emergency within 28 days. There is wide variation between similar NHS organisations in rates of such emergency readmissions. Not all emergency readmissions are likely to be part of the originally planned treatment and some may be potentially avoidable. The NHS may be helped to prevent potentially avoidable readmissions by seeing comparative figures and learning lessons from organisations with low readmission rates.

Definition of indicator and its variants:

Percentage of Emergency admissions to any hospital in England occurring within 28 days of the last, previous discharge from hospital after emergency admission with fractured proximal femur.

Statistic	Sex	Age group	Organisation	Period		File-worksheet Name
			(see glossary)	Current data	Trend data	
Indirectly age and sex-standardised percent (standardised to 2004/05)	P F M	All Ages	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County; LA (boundaries as at April 2009); PCO (boundaries as at October 2006); NHS provider Trusts (as during financial year); provider clusters; deprivation group (5, 7 bands)	FY 2008/09	FY 1999/00, FY 2000/01, FY 2001/02, FY 2002/03, FY 2003/04, FY 2004/05, FY 2005/06, FY 2006/07, FY 2007/08	32F_535ISP4FP_09_V1 32F_535ISP4FF_09_V1 32F_535ISP4FM_09_V1

Numerator:

Numerator data – The number of finished and unfinished continuous inpatient (CIP) spells that are emergency admissions within 0-27 days (inclusive) of the last, previous discharge from hospital (see denominator).

The date of the last, previous discharge from hospital, and the date and method of admission from the following CIP spell, are used to determine the interval between discharge and emergency readmission.

The numerator is based on a pair of spells, the discharge spell and the next subsequent readmission spell (this spell must meet the numerator criteria). The selection process thus carries over the characteristics of the denominator for the discharge spell and applies additional ones to the readmission spell.

The numerator is the number of denominator CIP spells with the following fields and values:

The first episode in readmission CIP spell ADMIDATE minus last episode in admission CIP spell DISDATE = 0-27 days inclusive (discharge date and admission date, includes negatives);

AND the first episode in the readmission CIP spell has:
ADMIMETH = 21, 22, 23, 24 or 28 (admission method);

Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Fields used from the last episode in a spell include:

PROCODETC (provider code, unmapped). Provider clusters are aggregates of the PROCODETC field.

Counts are by:
age / sex / organisation of residence in CIP spell (values for England are aggregates of these)

Where:
age bands are <1, 1-4, 5-9, … , 80-84, 85+;
sex is 1, 2 (male and female).

Source of numerator data - Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year, plus those up to 28 days in the next financial year, England, The NHS Information Centre for health and social care.

Comments on numerator data – Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). The selected diagnosis can occur in separate episodes and even in separate hospitals after transfer. A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March.

The numerator (readmissions) consists of CIP spells (see denominator) that include both finished and unfinished episodes (i.e. finished episodes from following years) i.e. readmissions can be finished and unfinished CIP spells. Where there is more than one readmission within 28 days, each readmission is counted once, in relation to the previous discharge.

Readmissions that end in death are included in the numerator.

Spells are attributed to the organisation of residence, based on the numerator.

The indicator includes discharges occurring after transfer to another Trust. For residence based aggregations discharges are counted to the first valid organisation coded in the spell. For provider based aggregations (Provider Trusts and Clusters) discharges are counted to the discharging Trust.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details).

Denominator:

Denominator data - The number of finished CIP spells following an emergency admission with a primary diagnosis on admission of fractured proximal femur (ICD 10 codes S72.0, S72.1, S72.2), with a discharge date up to March 31st within the year of analysis:

- S72.0 Fracture of neck of femur;
- S72.1 Pertrochanteric fracture;
- S72.2 Subtrochanteric fracture

Day cases and spells with a discharge coded as death are excluded.

The following fields and values are used for the denominator:

The first episode in the CIP spell has:
DIAG_01 in the valid list for this indicator (primary diagnosis);
AND EPITYPE = 1 (episode type);
AND SEX = 1 or 2 (sex);
AND EPIORDER = 1 (episode order);
AND ADMIMETH = 12, 22, 23, 24 or 28 (admission method);
AND EPISTART is valid (episode start date);
AND CLASSPAT = 1 or 5 (patient classification);
AND (MAINSPEF NOT BETWEEN '700' AND '715'
     or MAINSPEF is null) (main specialty)
AND STARTAGE is either 0-120 or 7001-7007 (age at start of episode);
AND DOB not 01/01/1900 or 01/01/1901 (date of birth).

And the last episode in the CIP spell has:
DISDATE is valid and < 31/03/YYYY+1 (discharge date);
AND DISMETH = 1, 2 or 3 (discharge method).

Fields used from the first episode in a spell where there is a valid organisation of residence code include:

SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, County) are aggregates of the SPELLRESLADSTC field.

Fields used from the last episode in a spell include:
PROCODETC (provider code, unmapped). Provider clusters are aggregates of the PROCODETC field.

Counts are by:
age / sex / organisation of residence in CIP spell (values for England are aggregates of these)

where:
age bands are <1, 1-4, 5-9, … , 80-84, 85+;
sex is 1, 2 (male and female).

Source of denominator data - Hospital Episode Statistics (HES) for the respective financial year, England, The NHS Information Centre for health and social care.

Comments on denominator data – There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). Quality of coding shows the proportion of diagnoses not coded. There may also be variation between hospitals in the way that they code diagnoses to the fourteen diagnosis fields in each episode, particularly primary diagnosis. For instance, they may code in the order in which the diagnoses were made, or according to their perceived importance or complexity. This may affect whether a particular spell is selected for inclusion in this indicator.

The denominator consists of CIP spells that cover all continuous consultant episodes for the same patient, including those following a transfer to another hospital. Denominator CIP spells must start with an admission episode and finish with a (live) discharge episode in the year of analysis.

CIP spells with a discharge code of death are excluded from the denominator because readmission is not possible.

Statistical Methods:

The indicator is indirectly standardised by age and sex. The person-based rate is standardised by using England age and sex rates as standards. The gender-specific rates are standardised using person-based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age and sex of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in rates from a previous year, plus the statistical significance of this change, have also been calculated. A positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals and banding of significance of improvement.

Interpretation of indicator:

Type of indicator - This is a condition-specific, cross-sectional annual comparative indicator, acting as a proxy for outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator - Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation and Local Authority and provider Trust level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence interval overlaps the national rate, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity - A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may contribute to the variation shown by the indicators. Differences in case-mix (beyond that accounted for by standardisation), severity of the fracture, comorbidities and other potential risk factors also contribute to the variation. Current data do not allow assignment of severity of illness across continuous inpatient spells, nor do they allow adjustment for any of these factors. This may pose less of a constraint at geographical organisation level than at hospital level. We have tried to deal with this constraint by presenting the data in clusters that are similar with respect to institution or organisation type. No attempt has been made to assess whether the readmission was linked to the discharge in terms of diagnosis. A patient discharged after fracturing a femur may be readmitted into a community hospital with a wound or chest infection. There are many different possibilities and over-specifying may lead to readmissions being missed. Gender-specific data standardised to person rates are available. Analyses at England level by the Index of Multiple Deprivation are presented.

Other potential confounding factors - A continuous inpatient spell may include transfers to other hospitals, e.g. for rehabilitation. The patterns of providing care may vary between NHS hospital trusts in terms of whether patients are transferred elsewhere for rehabilitation and convalescence before final discharge. Planned transfers, for example for rehabilitation, may extend length of stay and affect discharge destination figures and readmission rates.

Variation between hospitals in average length of stay may lead to variation between hospitals in the proportion of complications occurring in hospital as opposed to in the community after discharge from hospital. Readmissions may reflect self-discharge against medical advice, and levels of primary care and community resources available to manage care outside hospital. Readmissions may not be linked clinically to the previous spell and may be entirely appropriate for the clinical care of the patient. There may be variation between Trusts in the way emergency admissions are coded. Routine data do not allow for all of these aspects to be identified and removed from the indicator, however, this may be done through local audit.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess the extent to which readmissions were linked to the previous episode and therefore truly represent potentially avoidable adverse events are recommended.

Relevant national initiatives:

This indicator is among those recommended by a Working Group on Outcome Indicators for fractured proximal femur, set up to advise the Department of Health on new indicators. The indicator has been used by the Department of Health in NHS Performance Indicators 2002, and by the Commission for Health Improvement / Healthcare Commission in NHS Performance Ratings between 2003 and 2005. The National Service Framework for Older People contains standards and guidelines for the treatment of fractured proximal femur.

Further reading:

1. CRAG Clinical Outcomes Working Group. *Clinical Outcome Indicators*. Edinburgh: The Scottish Office, 1994.
2. Department of Health. *National Service Framework for older people*. London: Department of Health, 2001.
3. Department of Health. *NHS Performance Indicators: 2002*. London: Department of Health, 2002.
4. Fairbank J, Goldacre M, Mason A, Wilkinson E, Fletcher J, Amess M, Eastwood A, Cleary R (eds). *Health Outcome Indicators: Fractured Proximal Femur. Report of a working group to the Department of Health.* Oxford: National Centre for Health Outcomes Development, 1999.
5. Healthcare Commission. 2005 performance ratings: July 2005 website *http://ratings2005.healthcarecommission.org.uk/*. London: Healthcare Commission, 2005.

Updated: November 2010

Hospital procedures: primary hip replacement

Purpose:

The purpose of the indicator is to help monitor the level of provision of operative procedures known to confer benefit in terms of improved mobility and pain relief to people with hip joint problems.

Definition of indicator and its variants:

Admissions to hospital of patients where a primary hip replacement is undertaken.

Statistic	Sex	Age group	Organisation	Period		File_worksheet name
			(see glossary)	Current data	Trend data	
Indirectly age and sex-standardised rate per 100,000 (standardised to FY 2005/06)	P F M	All Ages	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County, LA (boundaries as at April 2009); PCO (boundaries as at October 2006); CTY.	FY 2008/09	FY 2002/03, FY 2003/04, FY 2004/05, FY 2005/06, FY 2006/07, FY 2007/08	33A_132ISR7JP_09_V1 33A_132ISR7JF_09_V1 33A_132ISR7JM_09_V1

Numerator:

Numerator data - The number of finished and unfinished continuous inpatient (CIP) spells for patients of all ages with at least one of the following primary hip replacement procedures (OPCS-4 codes) anywhere in the spell, in the respective financial year:

Primary hip replacement
- W37.1   Primary total prosthetic replacement of hip joint using cement;
- W37.8   Other specified total prosthetic replacement of hip joint using cement;
- W37.9   Unspecified total prosthetic replacement of hip joint using cement;
- W38.1   Primary total prosthetic replacement of hip joint not using cement;
- W38.8   Other specified total prosthetic replacement of hip joint not using cement;
- W38.9   Unspecified total prosthetic replacement of hip joint not using cement;
- W39.1   Primary total prosthetic replacement of hip joint NEC;
- W39.8   Other specified total prosthetic replacement of hip joint NEC;
- W39.9   Unspecified total prosthetic replacement of hip joint NEC;
- W93.1   Primary hybrid prosthetic replacement of hip joint using cemented acetabular component;
- W93.8   Other specified hybrid prosthetic replacement of hip joint using cemented acetabular component;
- W93.9   Unspecified hybrid prosthetic replacement of hip joint using cemented acetabular component;
- W94.1   Primary hybrid prosthetic replacement of hip joint using cemented femoral component;
- W94.8   Other specified hybrid prosthetic replacement of hip joint using cemented femoral component;
- W94.9   Unspecified hybrid prosthetic replacement of hip joint using cemented femoral component;
- W95.1   Primary hybrid prosthetic replacement of hip joint using cement NEC;
- W95.8   Other specified hybrid prosthetic replacement of hip joint using cement NEC;
- W95.9   Unspecified hybrid prosthetic replacement of hip joint using cement NEC.

The following fields and values are used for the numerator.

Any episode of the CIP spell has:
     A valid procedure from the above list in any operation position (OPER_NN);
     AND the first episode in the CIPS has:
         ADMISORC not = 51, 52 or 53 (admission source);
         AND EPITYPE = 1 (episode type);
         AND SEX = 1 or 2 (sex);
         AND EPIORDER = 1 (episode order);
         AND ADMIMETH = 11,12,13,21,22,23,24,28,31,32,81,82,83,84 or 89 (admission method);
         AND EPISTART >= 01/04/YYYY and EPISTART <= 31/03/YYYY+1 (episode start date within year);

AND CLASSPAT = 1 or 2 (patient classification);
AND STARTAGE is either 0-120 or 7001-7007 (age at start of episode);
AND DOB not 01/01/1900 or 01/01/1901 (date of birth).

Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Counts are by:
age / sex / first valid organisation of residence in CIP spell (values for England are aggregates of these)

where:
age bands are <1, 1-4, 5-9, … , 80-84, 85+;
sex is 1, 2 (male and female).

Source of numerator data - Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year. England, The NHS Information Centre for health and social care.

Comments on numerator data - This indicator monitors patients rather than the number of operations. Each person having a procedure should only be counted once during each admission. This is done by counting CIP spells (epiorder 1) only. Some transfers, which are also coded epiorder 1 could lead to double counting. In order to avoid this, spells which have an ADMISORC of 51-53, indicating a transfer from another NHS Trust, are excluded.

Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March. In order to avoid double counting that spell in both financial years, only spells where the selected procedure took place during the financial year of analysis are counted.

Spells are attributed to the organisation of residence, based on the numerator.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). These show the proportion of diagnoses not coded. There may be variation between hospitals in the way that they code diagnoses to the fourteen diagnosis fields in each episode, particularly primary diagnosis. For instance, they may code in the order in which diagnoses were made, or according to the perceived importance or complexity. This may affect whether a particular spell is selected for inclusion in the numerator of this indicator.

Individual spells may contain more than one eligible procedure but are only counted once. Alternatively, a single person may have a second eligible spell (for a second primary hip replacement) within the same year. Separate spells for an individual during the same year are counted separately in the numerator.

From the data year 2006/07, OPCS4.3 codes have been introduced and are included in this indicator. This may affect cross-year comparability between 2006/07 onwards and prior years.

Denominator:

Denominator data - The denominator is the resident population for the respective organisation.

Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at September 2009.

For further details on revisions to ONS mid-year population estimates, and their availability, see the comments in the specification for the 'Estimates of resident population' indicator.

Counts are by:
age / sex / organisation of residence (values for England are aggregates of these)

where:
age bands are <1, 1-4, 5-9, … , 80-84, 85+;
sex is 1, 2 (male and female).

Source of denominator data - Office for National Statistics.

Comments on denominator data - Ideally, the denominator should include only patients in the community who have hip joint problems, for example, arthritis, who meet the eligibility criteria for a primary hip replacement operation. In the absence of routine data on such patients, the total resident population is used as a denominator.

Statistical methods:

The indicator is indirectly standardised by age and sex. The person-based rate is standardised by age and sex using England age and sex rates as standards. The gender-specific rates are standardised by age using person-based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age and sex of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in procedure rate from a previous year, plus the statistical significance of this change, have also been calculated. A positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator - This is a procedure specific, cross-sectional annual comparative indicator, acting as a proxy for outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator – Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation and Local Authority level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence intervals for the two rates overlap, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity - A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may determine whether a patient gets admitted or not and may influence rates. Differences in case-mix (beyond that accounted for by standardisation), comorbidities and other potential risk factors also contribute to the variation. Current data do not allow assignment of severity of illness across continuous inpatient spells, nor do they allow adjustment for any of these factors. We have tried to deal with this constraint partially by presenting the data in clusters that are similar with respect to organisation type. Gender-specific data standardised to person rates are available.

Other potential confounding factors - The patterns of providing care may vary between organisations in terms of: extent of treatment in primary care settings; referral policies and practices; hospital and primary care based treatment facilities.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess the extent to which those eligible for the procedure are not receiving it are recommended.

Relevant national initiatives:

This indicator was part of the NHS Performance Indicators published by the Department of Health up to 2002.

Further reading:

1. NHS Executive. *Clinical Effectiveness Indicators – A Consultation Document.* London: Department of Health, 1998.
2. Department of Health. *NHS Performance Indicators* . London: Department of Health, 2002.

Updated: November 2010

Hospital procedures: revision hip replacement

Purpose:

The purpose of the indicator is to help monitor the frequency of revision hip replacement, some of which may be due to the premature failure of a previous primary hip replacement.

Definition of indicator and its variants:

Admissions to hospital of patients where a revision hip replacement is undertaken.

Statistic	Sex	Age group	Organisation	Period		File-worksheet Name
			(see glossary)	Current data	Trend data	
Indirectly age and sex-standardised rate per 100,000 (standardised to 2005/06)	P F M	All Ages	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County; LA (boundaries as at April 2009); PCO (boundaries as at October 2006).	FY 2008/09	FY 2002/03, FY 2003/04, FY 2004/05, FY 2005/06, FY 2006/07, FY 2007/08	33B_133ISR7KP_09_V1 33B_133ISR7KF_09_V1 33B_133ISR7KM_09_V1

Numerator:

Numerator data - The number of finished and unfinished continuous inpatient (CIP) spells for patients of all ages with at least one of the following revision hip replacement procedures (OPCS-4 codes) anywhere in the spell, in the respective financial year:

Revision hip replacement

- W37.0 Conversion from previous cemented total prosthetic replacement of hip joint;
- W37.2 Conversion to total prosthetic replacement of hip joint using cement;
- W37.3 Revision of total prosthetic replacement of hip joint using cement;
- W37.4 Revision of one component of total prosthetic replacement of hip joint using cement;
- W38.0 Conversion from previous uncemented total prosthetic replacement of hip joint;
- W38.2 Conversion to total prosthetic replacement of hip joint not using cement;
- W38.3 Revision of total prosthetic replacement of hip joint not using cement;
- W38.4 Revision of one component of total prosthetic replacement of hip joint not using cement;
- W39.0 Conversion from previous total prosthetic replacement of hip joint NEC;
- W39.2 Conversion to total prosthetic replacement of hip joint NEC;
- W39.3 Revision of total prosthetic replacement of hip joint NEC;
- W39.4 Attention to total prosthetic replacement of hip joint NEC;
- W39.5 Revision of one component of total prosthetic replacement of hip joint NEC;
- W39.6 Closed reduction of dislocated total prosthetic replacement of hip joint;
- W93.0 Conversion from previous hybrid prosthetic replacement of hip joint using cemented acetabular component;
- W93.2 Conversion to hybrid prosthetic replacement of hip joint using cemented acetabular component;
- W93.3 Revision of hybrid prosthetic replacement of hip joint using cemented acetabular component;
- W94.0 Conversion from previous hybrid prosthetic replacement of hip joint using cemented femoral component;
- W94.2 Conversion to hybrid prosthetic replacement of hip joint using cemented femoral component;
- W94.3 Revision of hybrid prosthetic replacement of hip joint using cemented femoral component;
- W95.0 Conversion from previous hybrid prosthetic replacement of hip joint using cement NEC;
- W95.2 Conversion to hybrid prosthetic replacement of hip joint using cement NEC;
- W95.3 Revision of hybrid prosthetic replacement of hip joint using cement NEC;
- W95.4 Attention to hybrid prosthetic replacement of hip joint using cement NEC.

The following fields and values are used for the numerator:

Any episode of the CIP spell has:

A valid procedure from the above list in any operation position (OPER_NN);
AND the first episode in the CIP spell has:
ADMISORC not = 51, 52 or 53 (admission source);
AND EPITYPE = 1 (episode type);
AND SEX = 1 or 2 (sex);
AND EPIORDER = 1 (episode order);
AND ADMIMETH = 11,12,13,21,22,23,24,28,31,32,81,82,83,84 or 89 (admission method);
AND EPISTART >= 01/04/YYYY and EPISTART <= 31/03/YYYY+1 (episode start date within year);
AND CLASSPAT = 1 or 2 (patient classification);
AND STARTAGE is either 0-120 or 7001-7007 (age at start of episode);
AND DOB not 01/01/1900 or 01/01/1901 (date of birth).

Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Counts are by:
age / sex / first valid organisation of residence in CIP spell (values for England are aggregates of these)

where:
age bands are <1, 1-4, 5-9, … , 80-84, 85+;
sex is 1, 2 (male and female).

Source of numerator data - Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year. England, The NHS Information Centre for health and social care.

Comments on numerator data - This indicator monitors patients rather than the number of operations. Each person having a procedure should only be counted once during each admission. This is done by counting CIPS (epiorder 1) only. Some transfers, which are also coded epiorder 1 could lead to double counting. In order to avoid this, spells which have an ADMISORC of 51-53, indicating a transfer from another NHS Trust, are excluded.

Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March. In order to avoid double counting that spell in both financial years, only spells where the selected procedure took place during the financial year of analysis are counted.

Deaths in the community prior to admission are not included, nor are patients who get treated in the community, as data about them are not available.

Spells are attributed to the organisation of residence, based on the numerator.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details).

Individual spells may contain more than one eligible procedure but are only counted once. Alternatively, a single person may have a second eligible spell (for a second revision hip replacement) within the same year. Separate spells for an individual during the same year are counted separately in the numerator.

From the data year 2006/07, OPCS4.3 codes have been introduced and are included in this indicator. This may affect cross-year comparability between 2006/07 onwards and prior years.

Denominator:

Denominator data - The denominator is the resident population for the respective organisation.

Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at September 2009.

For further details on revisions to ONS mid-year population estimates, and their availability, see the comments in the specification for the 'Estimates of resident population' indicator.

Counts are by:
age / sex / organisation of residence (values for England are aggregates of these)

where:
age bands are <1, 1-4, 5-9, … , 80-84, 85+;

sex is 1, 2 (male and female).

Source of denominator data - Office for National Statistics.

Comments on denominator data - Ideally, the denominator should include only patients who have had previous primary hip replacement surgery. In the absence of routine data on such patients, and given varying time lag periods between primary and revision procedures, the total resident population is used as a denominator.

Statistical methods:

The indicator is indirectly standardised by age and sex. The person-based rate is standardised by age and sex using England age and sex rates as standards. The gender-specific rates are standardised by age using person-based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age and sex of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in procedure rate from a previous year, plus the statistical significance of this change, have also been calculated. A positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator - This is a procedure specific, cross-sectional annual comparative indicator, acting as a proxy for outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator – Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation and Local Authority level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence intervals for the two rates overlap, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity - A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may determine whether a patient gets admitted or not and may influence rates. Differences in case-mix (beyond that accounted for by standardisation), comorbidities and other potential risk factors also contribute to the variation. Gender-specific data standardised to person rates are available.

Other potential confounding factors - The patterns of providing care may vary between organisations in terms of: extent of treatment in primary care settings; referral policies and practices; hospital and primary care based treatment facilities. The time lag between the primary and revision procedure may vary between patients and each year's or each organisation's figures will represent a mix of time lags, with implications for the interpretation of comparative data.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care. Given the mix of time lags (see confounding factors above), this indicator is more useful for monitoring the frequency of events than the attribution of events to any institution. A proportion of the events will be due to the premature failure of primary hip replacements.

Potential for follow-up action leading to change:

Studies to assess the extent to which revisions were due to the premature failure of primary hip replacement are recommended.

Relevant national initiatives:

This indicator was part of the NHS Performance Indicators published by the Department of Health up to 2002.

Further reading:

1. Bottone N, Gulliford M C. *Population Health Outcome Indicators for the NHS - Phase 2 of a Feasibility Study.* London: Faculty of Public Health Medicine, 1995.

Updated: November 2010

Hospital procedures: primary knee replacement

Purpose:

The purpose of the indicator is to help monitor the level of provision of an operative procedure known to confer benefit in terms of improved mobility and pain relief to people with knee joint problems.

Definition of indicator and its variants:

Admissions to hospital of patients where a primary knee replacement is undertaken.

Statistic	Sex	Age group	Organisation	Period		File-worksheet Name
			(see glossary)	Current data	Trend data	
Indirectly age and sex-standardised rate per 100,000 (standardised to 2005/06)	P F M	All Ages	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County; LA (boundaries as at April 2009); PCO (boundaries as at October 2006).	FY 2008/09	FY 2002/03, FY 2003/04, FY 2004/05, FY 2005/06, FY 2006/07, FY 2007/08	33C_253ISR7LP_09_V1 33C_253ISR7LF_09_V1 33C_253ISR7LM_09_V1

Numerator:

Numerator data - The number of finished and unfinished continuous inpatient (CIP) spells for patients of all ages with at least one of the following primary knee replacement procedures (OPCS-4 codes) anywhere in the spell, in the respective financial year:

Primary knee replacement

- W40.1   Primary total prosthetic replacement of knee joint using cement;
- W40.8   Other specified total prosthetic replacement of knee joint using cement;
- W40.9   Unspecified total prosthetic replacement of knee joint using cement;
- W41.1   Primary total prosthetic replacement of knee joint not using cement;
- W41.8   Other specified total prosthetic replacement of knee joint not using cement;
- W41.9   Unspecified total prosthetic replacement of knee joint not using cement;
- W42.1   Primary total prosthetic replacement of knee joint NEC;
- W42.8   Other specified total prosthetic replacement of knee joint;
- W42.9   Unspecified total prosthetic replacement of knee joint.

The following fields and values are used for the numerator:

Any episode of the CIP spell has:
     A valid procedure from the above list in any operation position (OPER_NN);
AND the first episode in the CIP spell has:
     ADMISORC not = 51, 52 or 53 (admission source);
     AND EPITYPE = 1 (episode type);
     AND SEX = 1 or 2 (sex);
     AND EPIORDER = 1 (episode order);
     AND ADMIMETH = 11,12,13,21,22,23,24,28,31,32,81,82,83,84 or 89 (admission method);
     AND EPISTART >= 01/04/YYYY and EPISTART <= 31/03/YYYY+1 (episode start date within year);
     AND CLASSPAT = 1 or 2 (patient classification);
     AND STARTAGE is either 0-120 or 7001-7007 (age at start of episode);
     AND DOB not 01/01/1900 or 01/01/1901 (date of birth).

Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
     SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Counts are by:

age / sex / first valid organisation of residence in CIP spell (values for England are aggregates of these)

where:
      age bands are <1, 1-4, 5-9, … , 80-84, 85+;
      sex is 1, 2 (male and female).

Source of numerator data - Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year. England, The NHS Information Centre for health and social care.

Comments on numerator data – This indicator monitors patients rather than the number of operations. Each person having a procedure should only be counted once during each admission. This is done by counting CIPS (epiorder 1) only. Some transfers, which are also coded epiorder 1 could lead to double counting. In order to avoid this, spells which have an ADMISORC of 51-53, indicating a transfer from another NHS Trust, are excluded.

Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March. In order to avoid double counting that spell in both financial years, only spells where the selected procedure took place during the financial year of analysis are counted.

Spells are attributed to the organisation of residence, based on the numerator.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details).

Individual spells may contain more than one eligible procedure but are only counted once. Alternatively, a single person may have a second eligible spell (for a second primary knee replacement) within the same year. Separate spells for an individual during the same year are counted separately in the numerator.

From the data year 2006/07, OPCS4.3 codes have been introduced and are included in this indicator. This may affect cross-year comparability between 2006/07 onwards and prior years.

Denominator:

Denominator data – The denominator is the resident population for the respective organisation.

Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at September 2009.

For further details on revisions to ONS mid-year population estimates, and their availability, see the comments in the specification for the 'Estimates of resident population' indicator.

Counts are by:
      age / sex / organisation of residence (values for England are aggregates of these)

where:
      age bands are <1, 1-4, 5-9, … , 80-84, 85+;
      sex is 1, 2 (male and female).

Source of denominator data - Office for National Statistics.

Comments on denominator data - Ideally, the denominator should include only patients in the community who have knee joint problems, for example, arthritis, who meet the eligibility criteria for a primary knee replacement operation. In the absence of routine data on such patients, the total resident population is used as a denominator.

Statistical methods:

The indicator is indirectly standardised by age and sex. The person-based rate is standardised by age and sex using England age and sex rates as standards. The gender-specific rates are standardised by age using person-based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age and sex of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in procedure rate from a previous year, plus the statistical significance of this change, have also been calculated. A positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator - This is a procedure specific, cross-sectional annual comparative indicator, acting as a proxy for outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator – Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation and Local Authority level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence intervals for the two rates overlap, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity - A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may determine whether a patient gets admitted or not and may influence rates. Differences in case-mix (beyond that accounted for by standardisation), comorbidities and other potential risk factors also contribute to the variation. Current data do not allow assignment of severity of illness across continuous inpatient spells, nor do they allow adjustment for any of these factors. We have tried to deal with this constraint partially by presenting the data in clusters that are similar with respect to organisation type. Gender-specific data standardised to person rates are available.

Other potential confounding factors - The patterns of providing care may vary between organisations in terms of: extent of treatment in primary care settings; referral policies and practices; hospital and primary care based treatment facilities.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess the extent to which those eligible for the procedure are not receiving it are recommended.

Relevant national initiatives:

This indicator was part of the NHS Performance Indicators published by the Department of Health up to 2002.

Further reading:

1. NHS Executive. *Clinical Effectiveness Indicators – A Consultation Document*. London: Department of Health, 1998.
2. Department of Health. *NHS Performance Indicators*: London: Department of Health, 2002.

Updated: November 2010

Emergency readmissions to hospital within 28 days of discharge: primary hip replacement surgery

Purpose:

To help monitor National Health Service (NHS) success in avoiding (or reducing to a minimum) readmission following discharge from hospital, when readmission was not part of the originally planned treatment. Previous analyses have shown that around 6% of patients discharged from NHS hospitals following elective hip replacement surgery are readmitted as an emergency within 28 days. There is wide variation between similar NHS organisations in rates of such emergency readmissions. Not all emergency readmissions are likely to be part of the originally planned treatment, and some may be potentially avoidable. The NHS may be helped to prevent potentially avoidable readmissions by seeing comparative figures and learning lessons from organisations with low readmission rates.

Definition of indicator and its variants:

Proportion of emergency admissions to any hospital in England occurring within 28 days of the last, previous discharge from hospital after elective admission for hip replacement surgery.

Statistic	Sex	Age group	Organisation	Period		File-worksheet name
			(see glossary)	Current data	Trend data	
Indirectly age and sex - standardised percent (standardised to 2003/04, 2004/05, 2005/06 pooled)	P F M	All Ages	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County; LA (boundaries as at April 2009); PCO (boundaries as at October 2006); NHS provider Trusts (as during financial year); provider clusters; deprivation group (5, 7 bands)	FY 2006/07, 2007/08, 2008/09 pooled	FYs 1999/00, 2000/01, 2001/02 pooled; FYs 2000/01, 2001/02, 2002/03 pooled; FYs 2001/02, 2002/03, 2003/04 pooled; FYs 2002/03, 2003/04, 2004/05 pooled; FYs 2003/04, 2004/05, 2005/06 pooled; FYs 2004/05, 2005/06, 2006/07 pooled; FYs 2005/06, 2006/07, 2007/08 pooled	33D_533ISP4CPP1_09_V1 33D_533ISP4CFP1_09_V1 33D_533ISP4CMP1_09_V1
Indirectly age and sex-standardised percent (standardised to 2004/05)	P F M	All Ages	E	FY 2008/09	FY 1999/00, FY 2000/01, FY 2001/02, FY 2002/03, FY 2003/04, FY	33D_533ISP4CPP2_08_V1 33D_533ISP4CFP2_08_V1 33D_533ISP4CMP2_08_V1

					2004/05, FY 2005/06, FY 2006/07, FY 2007/08	

Numerator:

Numerator data – The number of finished and unfinished continuous inpatient (CIP) spells that are emergency admissions within 0-27 days (inclusive) of the last, previous discharge from hospital (see denominator).

The date of the last, previous discharge from hospital, and the date and method of admission from the following CIP spell, are used to determine the interval between discharge and emergency readmission.

The numerator is based on a pair of spells, the discharge spell and the next subsequent readmission spell (this spell must meet the numerator criteria). The selection process thus carries over the characteristics of the denominator for the discharge spell and applies additional ones to the readmission spell.

The numerator is the number of denominator CIP spells with the following fields and values:

> The first episode in readmission CIP spell has:
> > ADMIDATE minus last episode in discharge CIP spell DISDATE < 27 days inclusive (discharge date and admission date, includes negatives);
> > AND first episode in the readmission CIP spell ADMIMETH = 21, 22, 23, 24 or 28 (admission method).

> Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
> > SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

> Fields used from the last episode in a spell include:
> > PROCODETC (provider code, unmapped). Provider clusters are aggregates of the PROCODETC field.

> Counts are by:
> > age / sex / organisation of residence in CIP spell (values for England are aggregates of these)

> where:
> > age bands are <1, 1-4, 5-9, … , 80-84, 85+;
> > sex is 1, 2 (male and female).

Source of numerator data **–** Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year, plus those up to 28 days in the next financial year, England, The NHS Information Centre for health and social care.

Comments on numerator data **–** Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March.

The numerator (readmissions) consists of CIP spells (see denominator) that include both finished and unfinished (i.e. finished episodes from following years) episodes, i.e. readmissions can be finished and unfinished CIP spells. Where there is more than one readmission within 28 days, each readmission is counted once, in relation to the previous discharge.

Readmissions that end in death are included in the numerator.

The indicator includes discharges occurring after transfer to another Trust.. For residence based aggregations discharges are counted to the first valid organisation coded in the spell. For provider based aggregations (Provider Trusts and Clusters) discharges are counted to the organisation from where the patient was last discharged.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details).

Denominator:

Denominator data - The number of finished CIP spells for patients of all ages where there was a primary procedure of hip replacement surgery coded anywhere in the spell (OPCS 4 codes), with a discharge date up to March 31st within the year of analysis:

- W371 - Primary total prosthetic replacement of hip joint using cement
- W378 - Other specified
- W379 - Unspecified
- W381 - Primary total prosthetic replacement of hip joint not using cement
- W388 - Other specified
- W389 - Unspecified
- W391 - Primary total prosthetic replacement of hip joint NEC
- W398 - Other specified
- W399 – Unspecified
- W931 - Primary hybrid prosthetic replacement of hip joint using cemented acetabular component
- W938 - Other specified hybrid prosthetic replacement of hip joint using cemented acetabular component
- W939 - Unspecified hybrid prosthetic replacement of hip joint using cemented acetabular component
- W941 - Primary hybrid prosthetic replacement of hip joint using cemented femoral component
- W948 - Other specified hybrid prosthetic replacement of hip joint using cemented femoral component
- W949 - Unspecified hybrid prosthetic replacement of hip joint using cemented femoral component
- W951 - Primary hybrid prosthetic replacement of hip joint using cement NEC
- W958 - Other specified hybrid prosthetic replacement of hip joint using cement
- W959 - Unspecified hybrid prosthetic replacement of hip joint using cement

Day cases, non-elective admissions and spells with a discharge coded as death are excluded.

The following fields and values are used for the denominator:

Any episode in the CIP spell has a procedure in the valid list for this indicator (in any position);

The first episode in the CIP spell has:
EPITYPE = 1 (episode type);
AND SEX = 1 or 2 (sex);
AND EPIORDER = 1 (episode order);
AND ADMIMETH = 11, 12, 13, 81 (admission method);
AND MAINSPEF NOT 501, 560, 610;
AND EPISTART is valid (episode start date);
AND CLASSPAT = 1 (patient classification);
AND STARTAGE is either 0-120 or 7001-7007 (age at start of episode);
AND DOB not 01/01/1900 or 01/01/1901 (date of birth).

AND the last episode in the CIP spell has:
DISDATE is valid and < 31/03/YYYY+1 (discharge date);
AND DISMETH = 1, 2 or 3 (discharge method).

Fields used from the first episode in a spell where there is a valid organisation of residence code include:
SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Fields used from the last episode in a spell include:
PROCODETC (provider code, unmapped). Provider clusters are aggregates of the PROCODETC field.

Counts are by:
age / sex / organisation of residence in CIP spell (values for England are aggregates of these)

where:
age bands are <1, 1-4, 5-9, … , 80-84, 85+;
sex is 1, 2 (male and female).

Source of denominator data **–** Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year, England, The NHS Information Centre for health and social care.

Comments on denominator data **–** There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details).

The denominator consists of CIP spells that cover all continuous, consultant episodes for the same patient, including those following a transfer to another hospital. Denominator CIP spells must start with an admission episode and finish with a (live) discharge episode in the year of analysis.

CIP spells with a discharge code of death are excluded from the denominator because readmission is not possible.

Statistical Methods:

The indicator is indirectly standardised by age and sex. The person-based rate is standardised by using England age and sex rates as standards. The gender-specific rates are standardised using person-based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age and sex of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in rates from a previous year (or previous set of pooled years), plus the statistical significance of this change, have also been calculated. A positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator **-** This is a procedure-specific, cross-sectional annual comparative indicator, acting as a proxy for outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator - Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals **-** Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation, Local Authority and provider Trust level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence interval overlaps the national rate, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity **-** A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may contribute to the variation shown by the indicators. Differences in case-mix (beyond that accounted for by standardisation), comorbidities and other potential risk factors also contribute to the variation. Current data do not allow assignment of severity of condition or seriousness of operations across continuous inpatient spells, nor do they allow adjustment for any of these factors. This may pose less of a constraint at geographical organisation level than at hospital level. We have tried to deal with this constraint by presenting the data in clusters that are similar with respect to institution or organisation type. No attempt has been made to assess whether the readmission was linked to the discharge in terms of diagnosis. A patient discharged after hip replacement surgery may be readmitted into a community hospital with a wound infection or other complication. There are many different possibilities and over-specifying may lead to readmissions being missed. Gender-specific data standardised to person rates as well as analyses at England level by the Index of Multiple Deprivation are presented.

Other potential confounding factors **-** A continuous inpatient spell may include transfers to other hospitals, e.g. for rehabilitation. The patterns of providing care may vary between NHS hospital trusts in terms of whether patients are transferred elsewhere for rehabilitation and convalescence before final discharge. Planned transfers, for example for rehabilitation, may extend length of stay and affect discharge destination figures and readmission rates.

Variation between hospitals in average length of stay may lead to variation between hospitals in the proportion of complications occurring in hospital as opposed to in the community after discharge from hospital. Readmissions may reflect self-discharge against medical advice, and levels of primary care and community resources available to manage care outside hospital. Readmissions may not be linked clinically to the previous spell and may be entirely appropriate for the clinical care of the patient. There may be variation between Trusts in the way emergency admissions are coded. Routine data do not allow for all of these aspects to be identified and removed from the indicator, however, this may be done through local audit.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess the extent to which readmissions were linked to the previous episode, and therefore truly represent potentially avoidable adverse events, are recommended.

Updated: November 2010

Mortality from gastric, duodenal, and peptic ulcers

Purpose:

To reduce deaths from gastric, duodenal, and peptic ulcers.

Definition of indicator and its variants:

Mortality from gastric, duodenal, and peptic ulcers (ICD-10 K25-K27 equivalent to ICD-9 531-533).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		34A_136NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		34A_136CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <75, 25-64, 65-74	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		34A_136SM00++_09_V1 34A_136SM0074_09_V1 34A_136SM2564_09_V1 34A_136SM6574_09_V1
		All ages			1993-09	34A_136SMT00++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <75, 25-64, 65-74	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		34A_136DR00++_09_V1 34A_136DR0074_09_V1 34A_136DR2564_09_V1 34A_136DR6574_09_V1
		All ages			1993-09	34A_136DRT00++_09_V1

Numerator:

Numerator data - Deaths from gastric, duodenal and peptic ulcers, classified by underlying cause of death (ICD-10 K25-K27, ICD-9 531-533), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males   All Ages: 1
Females   All Ages: 1

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Roderick P, Davies R, Raftery J, Crabbe D, Pearce R, Patel P. The cost-effectiveness of screening for Helicobacter pylori to reduce mortality and morbidity from gastric cancer and peptic ulcer disease: a discrete-event simulation model. *Health Technol Assess*, 2003;7(6). Available at: http://www.hta.ac.uk/fullmono/mon706.pdf

Updated: March 2011

Years of life lost due to mortality from gastric, duodenal and peptic ulcers

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from gastric, duodenal and peptic ulcers (ICD-10 K25-K27).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		34B_100CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		34B_100DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from gastric, duodenal and peptic ulcers classified by underlying cause of death (ICD-10 K25-K27), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Roderick P, Davies R, Raftery J, Crabbe D, Pearce R, Patel P. The cost-effectiveness of screening for Helicobacter pylori to reduce mortality and morbidity from gastric cancer and peptic ulcer disease: a discrete-event simulation model. *Health Technol Assess*, 2003;7(6). Available at:
http://www.hta.ac.uk/fullmono/mon706.pdf

Updated: March 2011

Mortality from pneumonia

Purpose:

To reduce deaths from pneumonia.

Definition of indicator and its variants:

Mortality from pneumonia (ICD-10 J12-J18 equivalent to ICD-9 480-486).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Number of deaths	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2009		35A_137NO_09_V1
Average age-specific death rate per 100,000 resident population	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		35A_137CR_09_V1
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	All ages, <75, All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09	 1993-09	35A_137SM00++_09_V1 35A_137SM0074_09_V1 35A_137SMT00++_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	All ages, <75, All ages	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09	 1993-09	35A_137DR00++_09_V1 35A_137DR0074_09_V1 35A_137DRT00++_09_V1

Numerator:

Numerator data - Deaths from pneumonia, classified by underlying cause of death (ICD-10 J12-J18, ICD-9 480-486 adjusted), registered in the respective calendar year(s).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

For trend analysis, the numbers of deaths observed in the years 1993-98 and 2000 must be adjusted to give "expected" numbers of deaths which would have been coded to this cause in ICD-10. This is done by multiplying the ICD-9 based death counts by the appropriate ICD-10/9 comparability ratio published by the ONS. Trend data cannot include years prior to 1993, because the ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards.

For this indicator the following ICD-10/9 comparability ratios were used:

Males	0-74yrs: 0.547	75-84yrs: 0.538	85+yrs: 0.644
Females	0-74yrs: 0.545	75-84yrs: 0.568	85+yrs: 0.697

Adjusted person counts are the sum of the adjusted male and female counts. Once adjusted, the counts are used to calculate rates in the usual way.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*

Interpretation of indicators:

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Updated: March 2011

Years of life lost due to mortality from pneumonia

Purpose:

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of years of life lost is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.

Definition of indicator and its variants:

Years of life lost due to mortality from pneumonia (ICD-10 A00-Y99).

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Crude rate per 10,000 population and number of years of life lost	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		35B_106CR_09_V1
Directly age-standardised rate per 10,000 population and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		35B_106DR_09_V1

Numerator:

Numerator data – Years of life lost and deaths from pneumonia classified by underlying cause of death (ICD-10 A00-Y99), registered in the respective calendar year(s).

Source of numerator data – Office for National Statistics (ONS).

Comments on numerator data – The number of years of life lost is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years. Infant deaths are omitted as they are mostly a result of causes specific to this age group and have different aetiologies to deaths later in life.

The numerator presented alongside the directly age-standardised years of life lost rate is the number of deaths rather than the number of years of life lost. This is because the standardisation calculation has been performed using 5-year age bands. In each age band the number of deaths is weighted by the number of years of life remaining from the mid-point of the age band up to age 75 years. See annex 3 for more details.

Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia*.

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator - Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Updated: March 2011

Potentially avoidable mortality associated with specified medical conditions amenable to surgical intervention

Purpose:

To reduce potentially avoidable mortality associated with specified medical conditions amenable to surgical intervention.

Definition of indicator and its variants:

Potentially avoidable deaths associated with specified medical conditions - appendicitis, abdominal hernia, cholelithiasis and cholecystitis (ICD-10 K35-K38, K40-K46, K80, K81), amenable to surgical intervention.

From the November 2005 *Compendium* release of 2002-04 data onwards, the age-group included is 0-74 years rather than the 5-64 years used in previous *Compendia*. The change reflects the replacement of the 'mortality from potentially avoidable causes' indicator by 'mortality from causes considered amenable to healthcare' for which this surgical indicator forms a constituent part.

Statistic	Sex	Age group	Organisation (see glossary)	Current data	Trend data	File-worksheet name
Indirectly age-standardised mortality ratio (SMR) and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		36A_174SM0074_09_V1
Directly age-standardised mortality rate per 100,000 and number of deaths	MFP	<75	E&W, E, GOR, ONS area, SHA, LA, PCO, CTY	2007-09		36A_174DR0074_09_V1

Numerator:

Numerator data - Potentially avoidable deaths associated with the following underlying causes of death and registered in the respective calendar years: appendicitis, abdominal hernia, cholelithiasis and cholecystitis (ICD-10 K35-K38, K40-K46, K80, K81).

Source of numerator data - Office for National Statistics (ONS).

Comments on numerator data - Mortality data for years 1993-2006 were extracted by ONS in June 2007 with organisational codes assigned using the postcode of usual residence and the November 2006 edition of the National Statistics Postcode Directory (NSPD). Data for subsequent years were extracted in June of the following year using the respective year's November edition of the NSPD.

The numbers of deaths are small in some areas and SMRs should be interpreted with caution.

In January 2001, the ONS implemented a change from ICD-9 to ICD-10 for coding causes of death in England & Wales. As part of an exercise to investigate the effects of this change, the ONS also re-coded all deaths registered in 1999. Deaths for years prior to 1999 and for year 2000 have not been re-coded.

For current analysis, therefore, all data are based on ICD-10.

From the 2003 *Compendium* onwards, data are based on the original causes of death rather than the final causes used in earlier *Compendia.*

See Annex 2 for more details.

Denominator:

Denominator data - 2001 Census based mid-year population estimates for the respective calendar years.

Source of denominator data - ONS.

Comments on denominator data - Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 24 November 2010.

Statistical methods:

Annex 2: Changes to Office for National Statistics mortality data
Annex 3: Explanations of statistical methods used in the *Compendium*
Annex 5: European Standard Population

Interpretation of indicators:

Quality of indicator – Annex 12 describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Further reading:

1. Nolte E & McKee M. *Does Healthcare Save Lives - Avoidable Mortality Revisited*. London: The Nuffield Trust, 2004.

Updated: March 2011

Deaths within 30 days of a hospital procedure: surgery (non-elective admissions)

Purpose:

The national confidential enquiries into deaths after surgery (NCEPOD) have, over many years, consistently shown that some deaths are associated with shortcomings in health care. The National Health Service (NHS) may be helped to prevent such potentially avoidable deaths by seeing comparative figures and learning lessons from the confidential enquiries, and from the experience of hospitals with low death rates.

Definition of indicator and its variants:

Deaths occurring in hospital and after discharge between 0 and 29 days inclusive of a selection of operative procedures following a non-elective admission (except for patients with cancer).

Statistic	Sex	Age group	Organisation	Period		File-worksheet name
			(see glossary)	Current data	Trend data	
Indirectly age, sex and procedure - standardised rate per 100,000 (standardised to 2004/05)	P F M	All Ages	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County; LA (boundaries as at April 2009); PCO (boundaries as at October 2006); deprivation group (5, 7 bands);Trust Cluster; Trust.	FY 2008/09	FY 1999/00, FY 2000/01, FY 2001/02, FY 2002/03, FY 2003/04, FY 2004/05, FY 2005/06, FY 2006/07, FY 2007/08	36B_214ISR1AP_09_V1 36B_214ISR1AF_09_V1 36B_214ISR1AM_09_V1

Numerator:

Numerator data - The number of denominator continuous inpatient (CIP) spells where the patient dies in hospital or after discharge between 0-29 days (inclusive) of the first eligible procedure found in any of the operation fields in any episode in the spell in the respective financial year.

Deaths that occur outside hospital following discharge but between 0-29 days of an eligible procedure are included. This was achieved through linkage of HES data with deaths data from the Office for National Statistics (ONS). Records of all deaths which occurred in England during the period of analysis for each indicator plus 30 days after were obtained from ONS. Linkage was undertaken using the most recent CIP denominator spell for each person discharged alive.

The date of the first eligible procedure in any operation field, and the date and method of discharge from the last episode in the CIP spell (or HES/ONS linked data), are used to determine the interval between procedure and death.

Where the operation date is missing or invalid, it is assumed that the procedure takes place one day after the start of the episode containing the procedure. If the episode start date is not valid, then it is assumed the procedure took place one day after the admission date of the spell. If this is still not valid, then the date is left blank. The exception to this is where the episode starts and ends on the same day, in which case the procedure is assumed to take place on the day the episode started.

The numerator is the number of denominator CIP spells with the following fields and values:

The last episode in CIP spell (or HES/ONS linked*) has:
DISMETH* = 4 (discharge method);
AND DISDATE* minus procedure date = 0-29 days inclusive (discharge date and procedure date).

Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:

SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Fields used from the episode in a spell where the first valid procedure took place include:
PROCODETC (provider code, unmapped). Provider clusters are aggregates of the PROCODETC field.

Counts are by:
age / sex / procedure (OPCS 4 chapter / selected sub-groups) / organisation of residence in CIP spell (values for England are aggregates of these)

where:
age bands are <1, 1-4, 5-14,15-44, 45-64, 65-74, 75-84, 85+;
sex is 1, 2 (male and female);
procedure is within selected sub-groups.

Source of numerator data **-** Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year, plus those up to 30 days in the next financial year, England, The NHS Information Centre for health and social care; and the Office for National Statistics.

Comments on numerator data - Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). The selected procedure and death can occur in separate episodes and even in separate hospitals after transfer. A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March.

The numerator relates to death following the first eligible procedure found in a CIP spell in any episode (the first procedure can appear in any of the operation fields in an episode).

The indicator includes deaths occurring after transfer to another Trust. For residence based aggregations, deaths are counted to the first valid organisation coded in the spell; for provider based aggregations, (Provider Trusts and Clusters) deaths are counted to the organisation that performed the procedure.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details).

There may be variation between Trusts in the way that they code operations to the operation fields in each episode. For instance, Trusts may code procedures chronologically, or according to the degree of complexity of the procedure. There may also be variation in the proportion of cases where the operation date is not coded.

Denominator:

Denominator data - The number of finished continuous inpatient spells for patients of all ages where there was at least one mention of a relevant non-elective surgical procedure coded anywhere in the spell, excluding those with mention of a diagnosis of cancer (ICD 10 codes C00-C97, D37-D48) or chemotherapy for cancer (ICD 10 code Z51.1) anywhere within the spell.

Day cases are excluded. A spell may include more than one operative procedure but will only be counted once even if it contains more than one of the included procedures. The list of eligible procedures is included in the data files for this indicator.

The following fields and values are used for the denominator:

Any episode in the CIP spell has:
CI1a_NEWOPER is NOT NULL (first eligible procedure in the spell);

AND the episode in the CIP spell containing the first eligible procedure has:
CI1a_NEWDATE is >= 01/04/YYYY and CI1a_NEWDATE <= 31/03/YYYY+1 (date of first eligible procedure in the spell within year, see numerator for the way missing dates are handled);

AND the first episode in the CIP spell has:
EPITYPE = 1 or 2 (episode type);
AND CLASSPAT = 1 or 5 (patient classification);
AND STARTAGE is either 0-120 or 7001-7007 (age at start of episode);
AND EPISTART is valid (episode start date);
AND SEX = 1 or 2 (sex);
AND EPIORDER = 1 (episode order);
AND EPISTAT = 3 (episode status);
AND DOB not 01/01/1900 or 01/01/1901 (date of birth);

AND the first episode in the provider spell where the first eligible procedure was found has:
ADMIMETH = 21, 22, 23, 24, 28, 31, 32, 81, 82, 83 (admission method);

AND the last episode in the CIP spell (or HES/ONS linked*) has:
DISMETH* = 1, 2, 3 or 4 (discharge method);
AND DISDATE* is valid (discharge date).

Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
SPELLRESPCTC, SPELLRESLADSTC. SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Fields used from the episode in a spell where the first valid procedure took place include:
PROCODETC (provider code, unmapped). Provider clusters are aggregates of the PROCODETC field.

Counts are by:
age / sex / procedure (OPCS 4 chapter / selected sub-groups) / organisation of residence in CIP spell (values for England are aggregates of these)

where:
age bands are <1, 1-4, 5-14,15-44, 45-64, 65-74, 75-84, 85+;
sex is 1, 2 (male and female); and
procedure is within selected sub-groups.

Source of denominator data - Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year, England, The NHS Information Centre for health and social care.

Comments on denominator data - There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). Denominator CIP spells are selected if there is at least one mention of an eligible procedure. As there may be more than one eligible procedure in a spell, each such spell is only counted once. There may be variation between hospitals in the way that they code operations to the operation fields in each episode. For instance, Trusts may code procedures chronologically or according to the degree of complexity of the procedure. This may affect which procedure is selected for calculation of interval to death.

The list of eligible operative procedures (listed in the data files) was based on a positive selection of procedures of particular interest and the exclusion of procedures which were considered inappropriate to include. Procedures of particular interest were:

- Procedures (in the primary position) that were associated with a high volume of deaths in calendar years 1999 to 2001;
- Procedures (in the primary position) that were associated with a high mortality rate in calendar years 1999 to 2001;
- Procedures which had given rise to concerns identified in the NCEPOD reports.

Procedures considered inappropriate for inclusion cover diagnostic and other procedures where the procedure itself is not likely to result in death. These include:

- Procedures in OPCS4 chapter Y (not appropriate as a primary procedure);
- Procedures excluded by the 2002, and subsequent, definitions of this indicator;
- Other procedures with low mortality rates or low actual incidence of mortality.

Additionally, procedures K40 to K46 are excluded from this indicator as they are covered in a separate indicator "deaths following a coronary artery bypass graft operation".

Patients with a spell in the year, or a quarter either side, with any mention of a diagnosis of cancer (other than benign or in situ cancers) anywhere in the spell are excluded. The relevant codes are ICD 10 codes C00 to C97 and D37 to D48, or mention of chemotherapy for cancer (ICD 10 code Z51.1).

Day cases are excluded because they would distort the indicator, as the numbers are large and the risk of death is relatively low.

Statistical Methods:

The indicator is indirectly standardised by age, sex and procedure (at OPCS4 chapter / selected sub-chapters level, based on eligible procedures). The list of procedure groups used for standardisation is included in the data files for this indicator. We defined these groups at OPCS4 coding chapter and sub-chapter level where the death

rate was significantly different from that of the next higher level in two consecutive financial years and there were at least 50 spells in each year. The person-based rate is standardised by age, sex and procedure using England age, sex and procedure rates as standards. The gender-specific rates are standardised by age and procedure using person-based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age, sex, and procedure of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in rates from a previous year, plus the statistical significance of this change, have also been calculated. A positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator - This is a generic, cross-sectional annual comparative indicator of outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations. The 'basket' of selected procedures is considered to be a robust marker for overall mortality post-surgery.

Quality of Indicator - Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation, Local Authority and provider Trust level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence interval overlaps the national rate, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity - A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may contribute to the variation shown by the indicators. Differences in case-mix (beyond that accounted for by standardisation), severity of the illness, comorbidities, complexity of the operations, and other potential risk factors also contribute to the variation. Current data do not allow assignment of severity of illness and seriousness of operations across continuous inpatient spells, nor do they allow adjustment for any of these factors. This may pose less of a constraint at geographical organisation level than at hospital level. We have tried to deal with this constraint partially by presenting the data in clusters that are similar with respect to institution or organisation type. Gender-specific data standardised to person rates as well as analyses at England level by the Index of Multiple Deprivation are presented.

Other potential confounding factors - The patterns of providing care may vary between organisations in terms of whether patients are transferred elsewhere for rehabilitation and convalescence before final discharge or death. Variation between hospitals in average length of stay may lead to variation between hospitals in the proportion of deaths occurring in hospital as opposed to in the community after discharge from hospital.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess the extent to which deaths were linked to the previous surgery and truly represent potentially avoidable adverse events are recommended.

Relevant national initiatives:

The National Confidential Enquiry into Peri-operative Deaths examines factors associated with deaths following surgery. This indicator has been used by the Department of Health in NHS Performance Indicators, and by the

Commission for Health Improvement and the Healthcare Commission in NHS Performance ratings, between 1999 and 2005. It has also been used for international comparisons.

Further reading:

1. *Callum KG, Carr NJ, Gray AJG, Hargraves CMK, Hoile RW, Ingram GS, Martin IC, Sherry KM. Functioning as a Team? - The 2002 Report of the National Confidential Enquiry into Perioperative Deaths. London: NCEPOD, 2002.*
2. *Commission on Professional and Hospital Activities. Hospital Wide Quality Indicators. Ann Arbor, 1991.*
3. *Cullinane M, Gray AJG, Hargraves CMK, Lansdowne M, Martin IC, Schubert M. Who operates when? - The 2003 Report of the National Confidential Enquiry into Perioperative Deaths. London: NCEPOD, 2003.*
4. *Department of Health. NHS Performance Indicators: February 2002. London: Department of Health, 2002.*
5. *Healthcare Commission. 2005 Performance Ratings: July 2005 website http://ratings2005.healthcarecommission.org.uk/.* London: Healthcare Commission, 2005.

Updated: November 2010

Hospital procedures: cataract removal

Purpose:

The purpose of the indicator is to help monitor the frequency of cataract extraction. A cataract is defined by the loss of the normal transparency of the lens of the eye, which may occur for a number of reasons. The most common is associated with ageing. It either impairs visual function or prevents inspection of or treatment to the retina when required. Inadequate provision of cataract surgery is likely to lead to inappropriately delayed treatment for individual patients and ongoing handicap due to impaired visual function. This indicator is intended to act as a basis for population level comparisons of service provision with respect to cataract. It is assumed that the age-specific prevalence of cataract is unlikely to vary substantially geographically, and therefore large variations in the rate of surgery are likely to indicate variations in provision rather than need for cataract extraction. Variability in clinical decision making, in both primary and secondary care, has been identified as a major contributory factor in the observed geographical variation in cataract surgery rates.

Definition of indicator and its variants:

Admissions to hospital of patients where a cataract extraction is undertaken.

Statistic	Sex	Age group	Organisation	Period		File-worksheet Name
			(see glossary)	Current data	Trend data	
Indirectly age and sex-standardised rate per 100,000 (standardised to 2005/06)	P F M	All Ages	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County; LA (boundaries as at April 2009); PCO (boundaries as at October 2006).	FY 200809	FY 2002/03 FY 2003/04 FY 2004/05 FY 2005/06 FY 2006/07 FY 2007/08	36C_254ISR7IP_09_V1 36C_254ISR7IF_09_V1 36C_254ISR7IM_09_V1

Numerator:

Numerator data - The number of finished and unfinished continuous inpatient (CIP) spells for patients of all ages with at least one of the following cataract procedures (OPCS-4 codes) anywhere in the spell, in the respective financial year:

- C71.1 Simple linear extraction of lens;
- C71.2 Phacoemulsification of lens;
- C71.3 Aspiration of lens;
- C71.8 Other specified;
- C71.9 Unspecified;
- C72.1 Forceps extraction of lens;
- C72.2 Suction extraction of lens;
- C72.3 Cryoextraction of lens;
- C72.8 Other specified;
- C72.9 Unspecified;
- C74.1 Curettage of lens;
- C74.2 Discission of cataract;
- C74.3 Mechanical lensectomy;
- C74.8 Other specified;
- C74.9 Unspecified;
- C75.1 Insertion of prosthetic replacement for lens NEC;
- C75.2 Revision of prosthetic replacement for lens;
- C75.3 Removal of prosthetic replacement for lens;
- C75.4 Insertion of prosthetic replacement for lens using suture fixation;
- C75.8 Other specified;
- C75.9 Unspecified.

The following fields and values are used for the numerator:

Any episode of the CIP spell has:
    A valid procedure from the above list in any operation position (OPER_NN);
AND the first episode in the CIP spell has:
    ADMISORC not = 51, 52 or 53 (admission source);
    AND EPITYPE = 1 (episode type);
    AND SEX = 1 or 2 (sex);
    AND EPIORDER = 1 (episode order);
    AND ADMIMETH = 11,12,13,21,22,23,24,28,31,32,81,82,83,84 or 89 (admission method);
    AND EPISTART >= 01/04/YYYY and EPISTART <= 31/03/YYYY+1 (episode start date within year);
    AND CLASSPAT = 1 or 2 (patient classification);
    AND STARTAGE is either 0-120 or 7001-7007 (age at start of episode);
    AND DOB not 01/01/1900 or 01/01/1901 (date of birth).

Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
    SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Counts are by:
    age / sex / first valid organisation of residence in CIP spell (values for England are aggregates of these)

where:
    age bands are <1, 1-4, 5-9, … , 80-84, 85+;
    sex is 1, 2 (male and female).

Source of numerator data - Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year. England, The NHS Information Centre for health and social care.

Comments on numerator data - This indicator monitors patients rather than the number of operations. Each person having a procedure should only be counted once during each admission. This is done by counting CIP spells (epiorder 1) only. Some transfers, which are also coded epiorder 1 could lead to double counting. In order to avoid this, spells which have an ADMISORC of 51-53, indicating a transfer from another NHS Trust, are excluded.

Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March. In order to avoid double counting that spell in both financial years, only spells where the selected procedure took place during the financial year of analysis are counted.

Spells are attributed to the organisation of residence, based on the numerator.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details).

Individual spells may contain more than one eligible procedure but are only counted once. Alternatively, a single person may have a second eligible spell (for a second cataract extraction) within the same year. Separate spells for an individual during the same year are counted separately in the numerator.

From the data year (2006/07), a new OPCS4.3 code (C75.4 – Insertion of prosthetic replacement for lens using suture fixation) has been introduced and is included in this indicator. This may affect cross-year comparability between 2006/07 and prior years.

Denominator:

Denominator data – The denominator is the resident population for the respective organisation.

Data are based on the latest revisions of ONS mid-year population estimates for the respective years, current as at 29 September 2008.

For further details on revisions to ONS mid-year population estimates, and their availability, see the comments in the specification for the 'Estimates of resident population' indicator.

Counts are by:
    age / sex / organisation of residence (values for England are aggregates of these)

where:
    age bands are <1, 1-4, 5-9, … , 80-84, 85+;
    sex is 1, 2 (male and female).

Source of denominator data - Office for National Statistics.

Comments on denominator data - Ideally, the denominator should include only patients who have a diagnosis of cataract. In the absence of routine data on such patients, and given varying time lag periods between primary and revision procedures, the total resident population is used as a denominator.

Statistical methods:

The indicator is indirectly standardised by age and sex. The person-based rate is standardised by age and sex using England age and sex rates as standards. The gender-specific rates are standardised by age using person-based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age and sex of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in procedure rate from a previous year, plus the statistical significance of this change, have also been calculated. A positive percentage represents improvement and a negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator - This is a procedure specific, cross-sectional annual comparative indicator, acting as a proxy for outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator – Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals - Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation and Local Authority level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence intervals for the two rates overlap, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity - A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may determine whether a patient gets admitted or not and may influence rates. Differences in case-mix (beyond that accounted for by standardisation), comorbidities and other potential risk factors also contribute to the variation. Gender-specific data standardised to person rates are available.

Other potential confounding factors - The patterns of providing care may vary between organisations in terms of: referral policies and practices; hospital treatment facilities .

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess the extent to which those eligible for the procedure are not receiving it are recommended.

Relevant national initiatives:

This indicator is among those recommended by a Working Group on Outcome Indicators for cataract, set up to advise the Department of Health on new indicators. The indicator was part of the NHS Performance Indicators published by the Department of Health up to 2002.

Further reading:

1. Rosenthal R, Goldacre M, Cleary R, Coles J, Fletcher J, Mason A (eds). *Health Outcome Indicators: Cataract. Report of a working group to the Department of Health*. Oxford: National Centre for Health Outcomes Development, 1999 (www.nchod.nhs.uk).
2. Department of Health. *NHS Performance Indicators: 2002.* London: Department of Health, 2002.

Updated: December 2010

Emergency readmissions to hospital within 28 days of discharge: hysterectomy

Purpose:

To help monitor National Health Service (NHS) success in avoiding (or reducing to a minimum) readmission following discharge from hospital, when readmission was not part of the originally planned treatment. Previous analyses have shown that around 6% of patients discharged from NHS hospitals following elective hysterectomy are readmitted as an emergency within 28 days. There is wide variation between similar NHS organisations in rates of such emergency readmissions. Not all emergency readmissions are likely to be part of the originally planned treatment, and some may be potentially avoidable. The NHS may be helped to prevent potentially avoidable readmissions by seeing comparative figures and learning lessons from organisations with low readmission rates.

Definition of indicator and its variants:

Proportion of emergency admissions to any hospital in England occurring within 28 days of the last, previous discharge from hospital after elective admission for hysterectomy.

Statistic	Sex	Age group	Organisation	Period		File-worksheet name
			(see glossary)	Current data	Trend data	
Indirectly age standardised percent (standardised to 2003/04, 2004/05, 2005/06 pooled)	F	All Ages	E; GOR; ONS area (boundaries as at November 2006); SHA (boundaries as at July 2006); County; LA (boundaries as at April 2009); PCO (boundaries as at October 2006); NHS provider Trusts (as during financial year); provider clusters; deprivation group (5, 7 bands)	FY 2006/07, 2007/08, 2008/09 pooled	FYs 1999/00, 2000/01, 2001/02 pooled; FYs 2000/01, 2001/02, 2002/03 pooled; FYs 2001/02, 2002/03, 2003/04 pooled; FYs 2002/03, 2003/04, 2004/05 pooled; FYs 2003/04, 2004/05, 2005/06 Pooled; FYs 2004/05, 2005/06, 2006/07 Pooled; FYs 2005/06, 2006/07, 2007/08 pooled	36D_534ISP4BFP1_09_V1
Indirectly age-standardised percent (standardised to 2004/05)	F	All Ages	E	FY 2008/09	FY 1999/00, FY 2000/01, FY 2001/02, FY 2002/03 FY 2003/04 FY	36D_534ISP4BFP2_09_V1

					2004/05, FY 2005/06, FY 2006/07, FY 2007/08;	

Numerator:

Numerator data – The number of finished and unfinished continuous inpatient (CIP) spells that are emergency admissions within 0-27 days (inclusive) of the last, previous discharge from hospital (see denominator).

The date of the last, previous discharge from hospital, and the date and method of admission from the following CIP spell, are used to determine the interval between discharge and emergency readmission.

The numerator is based on a pair of spells, the discharge spell and the next subsequent readmission spell (this spell must meet the numerator criteria). The selection process thus carries over the characteristics of the denominator for the discharge spell and applies additional ones to the readmission spell.

The numerator is the number of denominator CIP spells with the following fields and values:

> The first episode in readmission CIP spell has:
>> ADMIDATE minus last episode in discharge CIP spell DISDATE < 27 days inclusive (discharge date and admission date, includes negatives);
>> AND first episode in the readmission CIP spell ADMIMETH = 21, 22, 23, 24 or 28 (admission method).

> Fields used from the first episode in a spell where there is a valid patient postcode allowing the derivation of the following organisation of residence codes include:
>> SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

> Fields used from the last episode in a spell include:
>> PROCODETC (provider code, unmapped). Provider clusters are aggregates of the PROCODETC field.

> Counts are by:
>> age / organisation of residence in CIP spell (values for England are aggregates of these)

> where:
>> age bands are <1, 1-4, 5-9, … , 80-84, 85+;
>> sex is 2 (female).

Source of numerator data **–** Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year, plus those up to 28 days in the next financial year, England, The NHS Information Centre for health and social care.

Comments on numerator data **–** Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details). A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March.

The numerator (readmissions) consists of CIP spells (see denominator) that include both finished and unfinished (i.e. finished episodes from following years) episodes, i.e. readmissions can be finished and unfinished CIP spells. Where there is more than one readmission within 28 days, each readmission is counted once, in relation to the previous discharge.

Readmissions that end in death are included in the numerator.

The indicator includes discharges occurring after transfer to another Trust. For residence based aggregations, discharges are counted to the first valid organisation coded in the spell. For provider based aggregations (Provider Trusts and Clusters) discharges are counted to the organisation from where the patient was last discharged.

There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details).

Denominator:

Denominator data - The number of finished CIP spells for females of all ages where there was at least one mention of a hysterectomy coded anywhere in the spell (OPCS 4 codes Q07.1-Q08.9), with a discharge date up to March 31st within the year of analysis:

- Q07.- Abdominal excision of uterus
- Q08.- Vaginal excision of uterus

Day cases, non-elective admissions and spells with a discharge coded as death are excluded.

The following fields and values are used for the denominator:

Any episode in the CIP spell has a procedure in the valid list for this indicator (in any position);

The first episode in the CIP spell has:
EPITYPE = 1 or 2 (episode type);
AND SEX = 2 (sex);
AND EPIORDER = 1 (episode order);
AND ADMIMETH = 11,12,13, 81 (admission method);
AND EPISTART is valid (episode start date);
AND CLASSPAT = 1 or 5 (patient classification);
AND STARTAGE is either 0-120 or 7001-7007 (age at start of episode);
AND DOB not 01/01/1900 or 01/01/1901 (date of birth).
.
AND the last episode in the CIP spell has:
DISDATE is valid and < 31/03/YYYY+1 (discharge date);
AND DISMETH = 1, 2 or 3 (discharge method).

Fields used from the first episode in a spell where there is a valid organisation of residence code include:
SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.

Fields used from the last episode in a spell include:
PROCODETC (provider code, unmapped). Provider clusters are aggregates of the PROCODETC field.

Counts are by:
age / organisation of residence in CIP spell (values for England are aggregates of these)

where:
age bands are <1, 1-4, 5-9, … , 80-84, 85+;
sex is 2 (female).

Source of denominator data **–** Hospital Episode Statistics (HES) for CIP spells intersecting the respective financial year, England, The NHS Information Centre for health and social care.

Comments on denominator data **–** There is variation in the completeness of hospital records and quality of coding (see Data Quality sections in Annex 4 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) for details).

The denominator consists of CIP spells that cover all continuous, consultant episodes for the same patient, including those following a transfer to another hospital. Denominator CIP spells must start with an admission episode and finish with a (live) discharge episode in the year of analysis.

CIP spells with a discharge code of death are excluded from the denominator because readmission is not possible.

Statistical Methods:

The indicator is indirectly standardised by age using England age rates as standards. Indirect standardisation involves the calculation of the ratio of an organisation's observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the age mix of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.

The percentage change in rates from a previous year (or previous set of pooled years), plus the statistical significance of this change, have also been calculated. A positive percentage represents improvement and a

negative percentage represents deterioration.

Annex 3 'Explanation of statistical methods' (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement.

Interpretation of indicator:

Type of indicator **-** This is a procedure-specific, cross-sectional annual comparative indicator, acting as a proxy for outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.

Quality of Indicator - Annex 12 (Methods section of the *Clinical and Health Outcomes Knowledge Base* www.nchod.nhs.uk) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.

Confidence Intervals **-** Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation, Local Authority and provider Trust level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area's rate does not contain the overall **national** rate, the difference between the two rates is considered statistically significant. If the confidence interval overlaps the national rate, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.

Effect of case-mix/severity **-** A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may contribute to the variation shown by the indicators. Differences in case-mix (beyond that accounted for by standardisation), comorbidities and other potential risk factors also contribute to the variation. Current data do not allow assignment of the severity of the condition or seriousness of operations across continuous inpatient spells, nor do they allow adjustment for any of these factors. This may pose less of a constraint at geographical organisation level than at hospital level. We have tried to deal with this constraint by presenting the data in clusters that are similar with respect to institution or organisation type. No attempt has been made to assess whether the readmission was linked to the discharge in terms of diagnosis. A patient discharged after a hysterectomy may be readmitted into a community hospital with a wound or chest infection. There are many different possibilities and over-specifying may lead to readmissions being missed. Analyses at England level by the Index of Multiple Deprivation are presented.

Other potential confounding factors **-** A continuous inpatient spell may include transfers to other hospitals, e.g. for rehabilitation. The patterns of providing care may vary between NHS hospital trusts in terms of whether patients are transferred elsewhere for rehabilitation and convalescence before final discharge. Planned transfers, for example for rehabilitation, may extend length of stay and affect discharge destination figures and readmission rates.

Variation between hospitals in average length of stay may lead to variation between hospitals in the proportion of complications occurring in hospital as opposed to in the community after discharge from hospital. Readmissions may reflect self-discharge against medical advice, and levels of primary care and community resources available to manage care outside hospital. Readmissions may not be linked clinically to the previous spell and may be entirely appropriate for the clinical care of the patient. There may be variation between Trusts in the way emergency admissions are coded. Routine data do not allow for all of these aspects to be identified and removed from the indicator, however, this may be done through local audit.

Potential value of indicator:

To stimulate discussion and encourage local investigation, and to lead to improvement in data quality and quality of care.

Potential for follow-up action leading to change:

Studies to assess the extent to which readmissions were linked to the previous episode, and therefore truly represent potentially avoidable adverse events, are recommended.

Updated: **November 2010**

Prevalence: hypothyroidism

Purpose:

To ascertain the prevalence of hypothyroidism from General Practice records and help ensure high standards of primary health care and treatment delivered to NHS patients.

Hypothyroidism is a common, serious condition with an insidious onset. The mean incidence is 3.5 per 1,000 in women, and 0.6 per 1,000 in men. The probability of developing hypothyroidism increases with age and reaches 14 per 1,000 in women aged between 75 and 80. Monitoring of hypothyroidism is almost entirely undertaken in primary care.

Definition of indicator and its variants:

Proportion of patients with hypothyroidism in a GP registered population.

The QOF rules exclude patients from the register if they are not taking thyroxine.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		38A_643PC_10_V1

Numerator:

Numerator data - Patients registered with GP practices with a coded diagnosis of hypothyroidism excluding those who are not taking thyroxine.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

Denominator:

Denominator data - All patients registered with GP practices (total practice list size).

Source of denominator data - See "Numerator data".

Comments on denominator data - The practice list sizes are supplied to QMAS from the National Health Applications and Infrastructure Services (NHAIS).

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

From 2009 onwards, National Prevalence Day has been moved to 31st March (previously 14th February) so that prevalence is calculated on the same basis as disease registers for indicator denominators.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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10. Department of Health, Investing in General Practice. *The New General Medical Services Contract*. Available at: http://www.dh.gov.uk/assetRoot/04/07/86/58/04078658.pdf
11. Eastern Region Public Health Observatory, The limitations of Quality and Outcomes Framework (QOF) data. Briefing No. 3, 2005. Available at: http://www.erpho.org.uk/Download/Public/12597/1/Briefing%2003%20The%20limitations%20of%20QOF%20data.pdf

Updated: June 2011

Thyroid function tests in patients with hypothyroidism

Purpose:

To help reduce the level of risk to health for NHS patients with hypothyroidism and ensure high standards of primary health care and treatment delivered to them.

There is no clear evidence on the appropriate frequency of TSH/T4 measurement. However, the consensus group on thyroid disease recommended an annual check of TSH/T4 levels in all patients treated with thyroxine. In addition they recommend an annual check in patients previously treated with radio-iodine or partial thyroidectomy.

Definition of indicator and its variants:

Proportion of patients on the hypothyroidism register with a record of thyroid function tests recorded in the previous 15 months.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	All Ages	E, GOR, SHA, PCO	FY 2009/10		38B_644PC_10_V1

Numerator:

Numerator data - Patients on the hypothyroidism register with thyroid function tests recorded in the 15 months before the reference date.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

The 'reference date' is the specified date of patient records held by the general practice modelled for the end of the QOF year (midnight 31st March). It is the same for the data from all practices and may differ from the date of data submission.

Denominator:

Denominator data - All patients on the hypothyroidism register excluding those who have been exception reported. Patients may be exception reported for the following reasons:
- registered in the three months before the reference date;
- hypothyroidism exception reported in the 15 months before the reference date;
- hypothyroidism diagnosis recorded in the three months before the reference date.

For more details regarding the description of the selection criteria and dataset rules of the relevant indicator set see the following documentation available at: http://www.wmrlmc.co.uk/gms2/informationtechnology.htm

Source of denominator data - See "Numerator data".

Comments on denominator data - The denominator is a count of patients for whom the clinical indicator should be met. However, the selection rules do not provide the same opportunity for all patients included in the denominator to take advantage of the full period (maximum number of months after the diagnosis) allowed by good practice for the test, measurement or treatment to be undertaken (e.g. if good practice for angina patients allows for a particular test to be conducted up to 12 months after diagnosis then patients diagnosed between four and 11 months before the reference date do not have the full period of 12 months for the test). Additionally, patients can be removed from the denominator through the application of exception reporting.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1. The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
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Updated: June 2011

Prevalence: learning disabilities

Purpose:

To ascertain the prevalence of learning disabilities from General Practice records and help ensure high standards of primary health care and treatment delivered to NHS patients.

People with learning disabilities are amongst the most vulnerable and socially excluded in our society. With closures of almost all the long stay hospitals for patients with learning disabilities, virtually all patients with learning disabilities are now living in the community and depend on primary health care teams for their primary health care needs.

Learning disability is defined as the presence of a significantly reduced ability to understand new or complex information, to learn new skills (impaired intelligence), with a reduced ability to cope independently (impared social functioning) which started before adulthood (18 years), with lasting effect on development. The definition encompasses people with a broad range of disabilities but does not include all those people who have a "learning difficulty".

Definition of indicator and its variants:

Proportion of adult patients with learning disabilities in a GP registered population.

Statistic	Sex	Age group	Organisation	Period		File_worksheet Name
			(see glossary)	Current data	Trend data	
Number and percent of patients	P	18+	E, GOR, SHA, PCO	FY 2009/10		42A_674PC_10_V1

Numerator:

Numerator data - Patients on the learning disability register, registered with GP practices.

Source of numerator data - Quality and Outcomes Framework (QOF).

Comments on numerator data - The data for this primary care indicator are derived from the Quality Management Analysis System (QMAS) and supplied by the Prescribing Support Unit at The NHS Information Centre for health and social care. The QOF is part of the General Medical Services (GMS) contract, with a focus on prevalence and management of common chronic diseases at general practice level. It is aimed at measuring the achievement of general practices against a set of evidence based negotiated standards and encouraging good practice.

The data to support the clinical quality indicators (i.e. clinical achievement data) are extracted from individual GP practice clinical systems and sent automatically to QMAS once a month. Practices can make additional submissions of clinical data at any time.

Denominator:

Denominator data - All patients aged 18 and over registered with GP practices (estimated age-banded practice list size).

Source of denominator data - See "Numerator data".

Comments on denominator data - Age-banded practice list sizes were obtained from the Prescription Services Division (RxS) of the NHS Business Services Authority.

Statistical methods:

The data are presented as raw (unadjusted) figures as recorded by the practices. Ideally, comparisons between PCOs should take into account differences between their populations in terms of age, gender and case-mix. However, this is not possible at present as the supplied data are not broken down by these characteristics.

Interpretation of indicators:

Quality of indicator - Users of data derived from QMAS should recognise that QMAS was established as a mechanism to support the calculation of practice QOF payments and not as a person based epidemiological tool. It is not a comprehensive source of data on quality of care in general practice, but it is potentially a rich and valuable source of such information, providing that the limitations of the data are acknowledged.

From 2009 onwards, National Prevalence Day has been moved to 31st March (previously 14th February) so that prevalence is calculated on the same basis as disease registers for indicator denominators.

There have been some significant revisions to the QOF, compared to previous years. Therefore direct comparisons cannot be made except for the indicators that have not been subject to definitional changes.

Further reading:

1.   The NHS Information Centre for health and social care. *National Quality and Outcomes Framework Achievement Data 2009/10*, October 2010. Available at: http://www.ic.nhs.uk/webfiles/QOF/2009-10/QOF_Achievement_Prevalence_Bulletin_2009-10_v1.0.pdf
2.   NHS Employers and BMA. *Quality and Outcomes Framework guidance for GMS contract 2009/10*, March 2010. Available at: http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_Guidance_2009_final.pdf
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Updated: June 2011

ANNEX 1

MEASURING DEPRIVATION

Contents

Introduction

There are a variety of deprivation indices currently in existence, which were developed to meet different objectives. There has been much discussion on their relative merits, but a clear consensus regarding the best selection of indicators or methods of construction has yet to be achieved. This paper begins by discussing the general concept of deprivation indices. It then presents brief summaries of the common measures and highlights some of the discussion that has surrounded their use.

Deprivation indices

In general, deprivation indices "measure the proportion of households in a defined small geographical unit with a combination of circumstances indicating low living standards or a high need for services, or both".[1] An important note to be made about all ecological measures of deprivation (i.e. measures based on geographic areas, rather than individual circumstances) is that "not all deprived people live in deprived wards, just as not everybody in a ward ranked as deprived are themselves deprived".[2] This point is reiterated by Sloggett and Joshi [3] who note "deprivation indices may be gainfully used to identify areas of relative concentration of disadvantage, in the absence of data at the personal level, or where the fact of geographic concentration is pertinent…but disadvantaged people also live elsewhere and could be excluded in large numbers if interventions were planned purely on the basis of a local, census based, deprivation score". They go on to note that "for maximum effectiveness, health policy needs to target people as well as places".

In interpreting deprivation scores it is important to remember that many deprivation scores are relative measures, i.e. the score for any one area is standardised by reference to the mean for the total of all areas included in the calculation. For example, scores derived for all the wards in one Local Authority (LA) cannot be compared to scores derived separately for all the wards in another LA, because the scores for each set of wards are relative to the mean for the respective LA.

Measures of deprivation in common use

There are many different measures of deprivation that are in common use. In the past, the most commonly used have been the Jarman Underprivileged Area Score, the Townsend Index, The Carstairs Index and the Department of

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the Environment's (DoE) Index of Local Conditions. More recently, the Indices of Deprivation 2000 (ID2000) published by the Department of Environment, Transport and the Regions (DETR) and its 2004 revision (ID2004) published by Office of the Deputy Prime Minister (ODPM), have come into widespread use.

In a study comparing how the use of different measures of deprivation may influence resource allocation decisions Mackenzie *et al*[4] highlighted that different organisations have preferences for different measures. For example, they state that the Townsend Material Deprivation Score is favoured by Health Authorities (HAs), whereas LAs have tended to use the DETR's ID2000. The DoE's Index of Local Conditions is also well used. The Jarman Underprivileged Area Score is used by DH for making additional payments to General Practitioners (GPs). A less widely used index, The Breadline Britain Score, has been used by the media to estimate the percentage of poor households in a particular area.

The Townsend Index and the Carstairs Index (which is a very similar measure developed specifically for the analysis of Scottish health data) were both developed as measures of material deprivation. They tend to be commonly used in epidemiological analyses, e.g. the publication by the Office for National Statistics (ONS) on Trends in Cancer Survival[5]. The Jarman Underprivileged Area Score was not originally constructed to measure deprivation but as a measure of General Practice workload. The Jarman Score was derived to take account of geographic variations in the demand for primary care based on a survey of GPs' subjective impressions of the social factors among their patients that most affected their workload.

The series of indices that have been produced by the DoE and its successors the DETR and ODPM, were designed as general measures to identify areas of greatest need in order to assist central government when allocating resources to LAs. The latest ID2004 published by ODPM in April 2004 are the most up to date and detailed analyses of deprivation in England ever produced. The Indices combine a number of indicators, chosen to cover a range of economic, social and housing issues for each of approximately 32,000 Super Output Areas (SOAs). The new indices replace the previous indices: ID2000, the 1998 Index of Local Deprivation and the 1991 Index of Local Conditions.

The Department of the Environment's Index of Local Conditions (1991)
– superseded by later DETR Indices of Deprivation

In 1995, the DoE commissioned a team of researchers to produce an "Index of Local Conditions". [6, 7] This was to provide a general index of urban deprivation in order to inform policy and planning initiatives. The main purpose of the index was to identify those areas that experience the greatest levels of multiple deprivation so that regeneration programmes could be targeted.

The Index of Local Conditions comprises 13 variables, seven Census variables and six non-Census variables (all 1991 except where stated):

Census variables:

1. Unemployment;
2. Children in low-earner households;
3. Overcrowding;
4. Housing lacking basic amenities;
5. No car;
6. Children in unsuitable accommodation;
7. Educational participation.

Non-Census variables:

8. Long-term unemployment;
9. Income support;
10. Low educational attainment;
11. Standardised mortality ratios;
12. Derelict land;
13. Home insurance weightings.

The Index of Local Conditions is an unweighted summation of the selected indicators using their log-transformed signed chi-square values. The standardisation and transformation "has the merits of: taking account of the small size of the denominators of many of the observations; using an interpretable value of zero; and using values which approximate the normal curve".[8] The actual number of persons which have each selected variable is compared to the number that is expected if average English rates applied. The difference between the actual and expected numbers is squared and then divided by the expected number. The value 1 is added and a log transformation then applied. Those scores where the actual rate is below the expected rate are given negative signs. Summed scores greater than zero indicate greater levels of material deprivation.

This index differs from most in using actual numbers rather than percentage rates as the input into the calculations. This has the effect of giving lower weights to those areas where the actual counts are small - and hence statistically less reliable (e.g. an area where 3 out of 10 persons are unemployed will have a lower score than one where unemployment is 30 out of 100).

The Department of the Environment, Transport and the Regions' Index of Local Deprivation (1998)

- superseded by the Indices of Deprivation 2000

In June 1998, following consultation, the DETR published an updated version of the 1991 Index of Local Conditions. The 1998 Index of Local Deprivation, based mainly on data for 1996, was calculated for all 354 LAs as constituted as at April 1998. The ward and enumeration district (ED) level indices are based on the 1991 Census Area definitions. There are 12 indicators in the district level index relating to different dimensions of deprivation – income, health, education, environment, crime, and housing.

The indicators are:

1. Unemployment (1997);
2. Dependent children of income support recipients (1996);
3. Overcrowding (1991 Census);
4. Housing lacking basic amenities (1991 Census);
5. Non-income support recipients in receipt of council tax benefit (1996);
6. Educational participation (1991 Census);
7. Long-term unemployment (1997);
8. Income support (1996);
9. Low educational attainment (1996);
10. Standardised mortality ratios (1996);
11. Derelict land (1993);
12. Home insurance weightings (1996).

There are two main differences in the method between the 1991 Index of Local Conditions and 1998 Index of Local Deprivation. Firstly, in the 1991 index the values for the indicators are simply added together to produce the overall index score, whereas in the 1998 index only the positive values (those where the actual count exceeded that expected) are summed. Secondly, in the 1991 index no weightings are attached to any of the indicators. In the 1998 index the values for the standardised mortality ratio and insurance premium indicators are multiplied by two to give them a similar level of influence in the overall index. [8]

The Department of the Environment, Transport and the Regions' Indices of Deprivation 2000
- superseded by the Indices of Deprivation 2004

In December 1998, the DETR commissioned the Social Disadvantage Research Centre at the University of Oxford to review and update the 1998 Index of Local Deprivation. There were criticisms of the 1998 Index of Local Deprivation and the 1991 Index of Local Conditions that it updated: the sub-district level indicators were out of date, and the chi-squared method needed to be reviewed (see above). Also, better small area data at the sub-district level were about to come on stream for the first time.

In August 2000, following extensive consultation, DETR published the Indices of Deprivation 2000 (ID 2000)[9]. This set of indices is more complex than all of the other commonly used indices.

The ID 2000 is made up of:

- Six Domain Indices at ward level (Income, Employment, Health Deprivation and Disability, Education Skills and Training, Housing and Geographical Access to Services);
- An overall ward level Index of Multiple Deprivation 2000 (IMD 2000);
- A supplementary ward level Child Poverty Index;
- Six summary measures of the overall IMD 2000 at the LA level.

The new IMD 2000 is an innovative and detailed ward level index with LA level presentations. It is based on six separate "domains" of deprivation. These are:

1. Income (25%);
2. Employment (25%);
3. Health Deprivation and Disability (15%);
4. Education, Skills and Training (15%);
5. Housing (10%);
6. Geographical Access to Services (10%).

A Child Poverty Index is also available. This was constructed by combining the indicators within the income domain, for children aged under 16 only.

These domains each contain information essential to LAs (and others) who wish to describe their area and the overall nation-wide picture. The ID 2000 uses mostly 1998 information from 33 indicators to describe deprivation at ward level. This includes information from previously untapped data sources, such as Department of Social Security (DSS) benefits data and University and Colleges Admissions Service (UCAS) data. Most of the indicators can be updated regularly and form the basis for a dynamic Index. In addition to the Domain Indices, the overall ward level IMD brings this substantial amount of knowledge and information together for the first time.

Drawing together these indicators gives the IMD 2000 a major advantage over previous indices. The range of indicators at ward level enables a focus on deprivation at a small geographical level that was not possible before.

This is an improvement on the 1998 Index of Local Deprivation which was able to present very little information at ward level. The information that was included was based on the 1991 Census and, therefore, was increasingly out of date.

The information from the IMD 2000 has been aggregated up to the LA level in six different ways, allowing LAs to be ranked according to how deprived they are relative to other districts. All of the six measures are equally valid and they should not be used in isolation from each other. They are:

1. Average Score - the population weighted average of the combined scores for the wards in an LA;
2. Average Rank - the population weighted average of the combined ranks for the wards in an LA;
3. Local concentration - the population weighted average of the ranks of an LA's most deprived wards that contain exactly 10% of the LA's population;
4. Extent - the proportion of an LA's population living in wards which rank within the most deprived 10% of wards in England;
5. Income Scale - the number of people in an LA who are income deprived;
6. Employment Scale - the number of people in an LA who are employment deprived.

Patterns of deprivation are complex: in some places the entire LA may be generally deprived, but with no very severe areas. Elsewhere, deprivation may be concentrated in very severe pockets that co-exist alongside generally affluent areas. The six measures are attempts to reflect these different patterns. As all the rankings are based on the same data, there is no one measure that can be used as an overall ranking. Some Authorities may be ranked poorly on some measures, but less so on others.

The data and further details about the ID 2000 can be found on the ODPM's website at:
http://www.odpm.gov.uk/stellent/groups/odpm_control/documents/contentservertemplate/odpm_index.hcst?n=4603&l=3

Indices of Deprivation 2000 for Health Authorities and Primary Care Groups
- superseded by the Indices of Deprivation 2004

The DH commissioned the Social Disadvantage Research Centre at the University of Oxford to produce the ID 2000 for HAs and Primary Care Groups (PCGs). These were received in May 2001 and are based on the boundaries as at 1st April 1999. At that time there were 99 HAs and 481 PCGs.

For both HAs and PCGs, the six summary measures of the IMD 2000 are presented in a similar fashion to that used for LAs. In addition the average score, average rank, concentration, and extents measures are also presented separately for each of the 6 deprivation domains. For each index, the HAs and PCGs are awarded both a score and a rank position.

The Office of the Deputy Prime Minister's Indices of Deprivation 2004

The ODPM commissioned the Social Disadvantage Research Centre at the Department of Social Policy and Social Research at the University of Oxford to update the ID 2000. Following two extensive public consultations, and an academic peer review, the new ID 2004 were produced in 2004. The new indices are based on the approach, structure, and methodology that were used to create the ID 2000, but have been updated in two key ways: first, more up-to-date data have been used; and second, new measures have been incorporated as new and improved data sources have become available.[10] The new ID 2004 includes 37 indicators within seven deprivation domains. The criteria for inclusion of these indicators were that they should be "domain specific" and appropriate for the purpose (i.e. they should measure that form of deprivation as directly as possible); measure major features of that deprivation (not conditions just experienced by a very small number of people or areas); up-to-date; capable of being updated on a regular basis; statistically robust; and available for the whole of England at a small area level in a consistent form. Where possible, the indicators relate to the year 2001. The seven domains are:

1. Income (22.5%);
2. Employment (22.5%);
3. Health and disability (13.5%);
   i   Education, skills and training (13.5%);
   ii Children and young people;
4. Skills;
5. Barriers to Housing and Services (9.3%);
   i   Wider Barriers;
   ii Geographical barriers;
6. Living environment (9.3%);
   i   Indoors living environment;
   ii Outdoors living environment;
7. Crime (9.3%).

These domains are combined in the overall measure of multiple deprivation, the IMD 2004. The model of multiple deprivation which underpins the IMD 2004 is based on the idea of distinct dimensions of deprivation that can be recognised and measured separately. These are experienced by individuals living in an area. People may be counted in one or more of the domains, depending on the number of types of deprivation that they experience. The overall IMD is conceptualised as a weighted area level aggregation of these specific dimensions of deprivation.

A further change from the ID 2000 is that the indices are calculated at a lower geographical level. The indices are presented for 32,482 SOAs in England rather than the 8,414 wards used previously. Each of the Super Output Areas (SOAs) has been assigned a score and rank for the IMD 2004; the seven separate domain indices; the sub-domains; and two supplementary indices: Income Deprivation Affecting Children, and Income Deprivation Affecting Older People.

Aggregations of the IMD 2004 to LA level have been made in the same way as for the IMD 2000, i.e. using six summary measures reflecting different patterns of deprivation. These are:

1. Average of SOA Ranks - the population weighted average of the combined ranks for the SOAs in an LA;
2. Average of SOA Scores - the population weighted average of the combined scores for the SOAs in an LA;
3. Local Concentration - the population weighted average of the ranks of an LA's most deprived SOAs that contain exactly 10% of the LA's population;
4. Extent - the proportion of an LA's population living in SOAs which rank within the most deprived 10% of SOAs in England;
5. Income Scale - the number of people who are income deprived;
6. Employment Scale - the number of people who are employment deprived.

County level summaries of the IMD 2004 have also been produced. At this point in time, IMD 2004 summary measures are not available for PCOs.

The data and further details about the ID 2004 can be found on the ODPM's website at:
http://www.odpm.gov.uk/stellent/groups/odpm_control/documents/contentservertemplate/odpm_index.hcst?n=4610&l=3

Jarman Underprivileged Area Score

The Jarman Underprivileged Area (UPA) Score[11, 12] was not originally constructed to measure deprivation but as a measure of General Practice workload. The index was derived to take account of geographic variations in the demand for primary care based on a survey of GPs' subjective impressions of which of their patients' social factors most affected the Practice workload. The variant of the score in most common use – the UPA8 score – comprises eight variables which were individually weighted by a sample of London GPs.[13] These are given along with their respective weights below:

1. Unemployment (3.34) - unemployed residents aged 16+ as a proportion of all economically active residents aged 16+;
2. Overcrowding (2.88) - residents in overcrowded households (more than one person per room) as a proportion of all residents in households;
3. Lone parents (3.01) - residents in "lone parent" households as a proportion of all residents in households;
4. Under 5s (4.64) - residents aged under 5 years as a proportion of all residents;
5. Elderly living alone (6.62) - elderly persons living alone as a proportion of all residents in housholds;
6. Ethnicity (2.50) - residents born in the New Commonwealth or Pakistan as a proportion of all residents;
7. Low social class (3.74) - persons in households with economically active head of household in socio-economic group 11 (unskilled manual workers) as a proportion of all residents in households;
8. Residential mobility (2.68) - residents who changed address in the previous year as a percentage of all residents.

Each variable is firstly expressed as a proportion. The proportions are then transformed by first calculating the square root and then finding the equivalent arc sine (asin). The variables are expressed as z-scores and multiplied by their respective weighting factors. Z-scores express each variable in terms of its mean value in the population and its standard error. If this were not done, then variables with larger scales would have more weight than variables with shorter scales in the overall score. The final score is obtained by summing the transformed variables. Higher scores indicate greater levels of GP workload.

The index has been criticised as "being better at defining inner-city deprivation because it includes factors like overcrowding and ethnicity".[14] Talbot[15] has extended this criticism by stating that "in particular, there is a strong bias towards London in the proportion of the population classified as deprived". He goes on to state that "the index fails to recognise the nature of deprivation in the north of England…benefit[ing] the Thames regions at the expense of peripheral regions".

Townsend Material Deprivation Score

The Townsend Score was developed for the Northern Regional Health Authority in order to address material aspects of deprivation, partly as a result of criticisms of the Jarman Index. It is based on just four variables, originally taken from the 1981 Census, that were selected to represent lack of material resources and insecurity, material living conditions, wealth, and income. The four variables are:

1. Unemployment - unemployed residents aged 16-59/64 as a proportion of all economically active residents aged 16-59/64;
2. Car ownership - households without a car as a proportion of all households;

3. Home ownership - households that are not in owner occupied accommodation as a proportion of all households;
4. Overcrowding - overcrowded households (more than one person per room) as a proportion of all households.

Two of the variables, unemployment and overcrowding, are firstly transformed using the log transformation $y = \ln(x + 1)$ to produce more normal distributions. The four variables are then expressed as standardised z-scores and summed, with each variable being given an equal weight, to give the final Townsend score. Scores greater than zero indicate greater levels of material deprivation.

Unlike the Jarman score, the Townsend Score uses only direct measures of deprivation and does not include any indirect measures such as the elderly, ethnic minorities, and single parents. Townsend *et al* [2] highlighted that "even if many among these minorities are deprived, some are not, and the point is to find out how many are deprived rather than operate as if all are in that condition. It is the form which their deprivation takes and not their status which has to be measured".

Townsend scores can be recalculated using the equivalent variables extracted for areas from the 1991 Census. However, it should be noted that the change in variable scores for any one area between 1981 and 1991 cannot be taken as indicative of reducing or increasing relative deprivation - primarily because of exogenous changes in the social characteristics of car and home ownership. Hence, explanatory models calibrated using 1981 Townsend scores should not be applied to 1991 scores without recalibration.

This index has been the most widely used, and has been considered one of the best indices available.[16] However, it has been superseded to a large extent by the release of the ID 2000, and the subsequent ID 2004.

Carstairs and Morris Scottish Deprivation Score (Also Called Scotdep)

The index was constructed by Carstairs and Morris for the analysis of Scottish health data.[17] It was developed as an alternative to the Townsend Index, incorporating different indicators to reflect specific characteristics of the Scottish highlands (e.g. lower female economic activity rates and higher social housing rates). However, it has also been used as a discriminator of health status in England. Like Townsend, the index is based on four variables, originally taken from the 1981 Census, which were judged to represent, or be determinants of, material disadvantage. Two of the indicators, overcrowding and access to a car, are the same as those used in Townsend. Unemployment is also still included, but is restricted to males only. For the fourth variable, the authors replaced housing tenure with an indicator of social class. They state "we do not find Townsend's reasons for excluding social class convincing since we believe that being in a low social class, equally with being unemployed, places families in a position of poor access to material resources…".[18] The authors considered housing tenure to be "less relevant in Scotland as a much higher proportion of housing stock is in the public sector and the variable would not have acted as a discriminator between large sections of the population".[19] The units of measurement of the four indicators are:

1. Overcrowding - residents in overcrowded households (more than one person per room) as a proportion of all residents in households;
2. Male unemployment - unemployed male residents aged 16+ as a proportion of all economically active male residents aged 16+;
3. Social class IV or V - residents in households with an economically active head of household in social class IV or V as a proportion of all residents in households;
4. No car - residents in household with no car as a proportion of all residents in households.

The four variables are expressed as standardised z-scores and summed, with each variable being given an equal weight, to give the index score.

Arbuthnott Index

This index was developed by the Scottish Health Board and was used in their report "Fair Shares for All".[20] Their analysis found four key indicators of morbidity and deprivation that are significantly more successful than other indicators in explaining the differences observed in the use of services between postcode areas. These indicators were then used to construct a single index, the "Arbuthnott index" for use in the allocation of resources to Health Boards. The four indicators are:

1. Mortality - Standardised Mortality Ratios (SMRs) for persons aged under 65 (5-year average);
2. Unemployment - persons claiming unemployment benefit as a proportion of all persons of working age;
3. Elderly claiming income support - persons aged 65+ claiming income support as a proportion of all persons aged 65+;
4. Households with two or more indicators of deprivation (unemployed or permanently sick head of household, low socio-economic head of household, overcrowded household, large household, lone parent household, or all elderly household) as a proportion of all households.

The four variables are calculated at the postcode sector level, expressed as standardised z-scores and summed, with each variable being given an equal weight, to give the index score. Positive scores indicate sectors with greater morbidity and deprivation.

This index is not a direct measure of healthcare needs; it is a measure of factors that influence these needs. Areas of the country in which there are high mortality rates among people under 65, high levels of unemployment, a high proportion of elderly people claiming income support, and a relatively high proportion of households with multiple deprivation are areas in which the population generally will tend to have relatively high needs for healthcare. Further details can be found on the Scottish Executive web site: http://www.scotland.gov.uk/fairshares/docs/fsfa-00.asp

MATDEP and SOCDEP

MATDEP (a material deprivation index) and SOCDEP (a social deprivation index) were developed by Forrest and Gordon[21] following the 1991 Census. The distinction between material and social deprivation has been explicitly stated by Townsend: "Material deprivation entails the lack of goods, services, resources, amenities and physical environment which are customary, or at least widely approved in the society under consideration. Social deprivation, on the other hand, is non-participation in the roles, relationships, customs, functions, rights and responsibilities implied by membership of a society and its sub-groups. Such deprivation may be attributed to the affects of racism, sexism and ageism…".[2] The distinction between material and social deprivation has two conceptual forms: "the argument between the use of direct and indirect measures and the different dimensions of deprivation when taking a social (roles and relationships) and a material (goods and services) perspective".[22]

Indicators used in MATDEP include:

1. Overcrowding - overcrowded households (more than 1 person per room) as a proportion of all households;
2. Lack amenity - households lacking or sharing use of a bath/shower and/or inside WC as a proportion of all households;
3. No central heating - households with no central heating as a proportion of all households;
4. No car - households without access to a car as a proportion of all households.

Indicators used in SOCDEP include:

1. Unemployment - unemployed residents as a proportion of all economically active residents;
2. Youth unemployed - unemployed residents aged 16-24 as a proportion of all economically active residents aged 16-24;
3. Lone parents - lone parent households as a proportion of all households;
4. Elderly - single pensioner households as a proportion of all households;
5. Long-term illness - households containing a person with limiting long-term illness as a proportion of all households;
6. Dependent only - households containing dependants only (e.g. single pensioners with long-term illness) as a proportion of all households.

MATDEP and SOCDEP scores are the summation of the unweighted standardised scores for each variable. Each variable is standardised by dividing the percentage value for each indicator in a particular geographic area by the maximum value for each indicator in all areas to give a value between 0 and 1. This means that the maximum score for SOCDEP is 6 and the maximum score for MATDEP is 4 (the minimum score for both indices is 0). Higher scores indicate greater levels of deprivation.

Breadline Britain Score

The Breadline Britain Score is the result of two surveys carried out by MORI for London Weekend Television and the Joseph Rowntree Foundation in 1983 and 1990. The 1983 study pioneered the use of the "consensual" or "perceived" deprivation approach to measuring poverty. The approach set out to determine whether there are people whose standard of living is below the minimum acceptable to society. The minimum standard of living was determined by interviewing a sample (based on age, sex, and working status) of 1,174 adults in 1983 and 1,831 adults in 1990. Aggregated data were weighted by age, household type, household tenure and ACORN housing type (see below) to be representative of the population of Great Britain. In order to ensure a large sample of people living in deprived areas, over-sampling was conducted in ACORN areas known to contain poor households.

In the 1990 Survey respondents were presented with a set of 44 cards on each of which was written the name of a different item covering a range of possessions and activities that relate to standards of living. For example: a television, a night out once a fortnight, and a warm waterproof coat. Respondents were asked to place the 44 cards into one of two boxes. Box A was for items which they considered necessary, i.e. those items which all adults should be able to afford and which they should not have to do without; Box B was for items which they considered to be desirable but not necessary. They were also asked if they felt differently about any of the items in the case of families with children. An item was deemed to be a socially perceived necessity if more than 50 per cent of respondents put it into Box A. Later in the interview the respondents were asked to assign one of the following 5 options to each of the 44 items:

1. Have and couldn't do without;
2. Have and could do without;
3. Don't have and don't want;
4. Don't have and can't afford;
5. Not applicable/don't know.

Respondents (and their households) were assigned a deprivation index score each time they answered "don't have and can't afford" to an item that was considered to be a necessity by more than 50 percent of respondents.[23]

Low Income Scheme Index (LISI) – A deprivation scale based on prescribing in General Practice

The indices listed so far are calculated for the resident populations of appropriate areas. Their values may not be reliable when attributed to the registered lists of General Practitioners, particularly if the persons registering with a particular practice do not represent an unbiased sample of the population of their area of residence. An alternative direct measure of practice list deprivation has been derived from prescription data. In 2001, more than 80 per cent of items[24] dispensed from prescriptions issued by NHS GPs in England were exempt from the prescription charge. Most of those exempt (over 60% of items) were on the basis of age (because the patient was under 16 or over 60). An additional number of items (almost 7%) were exempt because of what is termed HA exemption. This is due mainly to pregnancy but also includes a small number of specific diseases. However, over 11% of items were exempt because of low income (categories H, K, M, and N on the back of form FP10C). These low income categories cover recipients of family credit and income support and others who qualify on grounds of low income, and their dependants. The Low Income Scheme Index[25] calculates the proportion of total cost in a practice going to patients who are exempt for these reasons. Note that the exemption data is only available for a 5% sample of prescriptions.

When the index was originally devised there was a problem where the prescription was dispensed to a dispensing patient. Early versions of the index therefore did not include practices where there were a large number of dispensing patients. However, the Prescribing Support Unit (PSU) has since produced complete sets for the periods November 2000 to October 2001 and for the financial years 2001/02 and 2002/03. A small number of practices continue to be excluded because they have very few patients (less than 500). The latest General Practice scores are available on the Prescription Pricing Authority's (PPA) ePACT.net system or on request from the PSU.

Ideally the index should be used in conjunction with some measure of age, as a high proportion of age-exempt patients in an area may lower the proportion who claim exemption because of low income.

Deprivation Index using the ONS Longitudinal Study

Using data from the ONS Longitudinal Study, a deprivation index has been calculated based on individual characteristics. This index has been used to compare trends in regional deprivation and mortality.[26]

The ONS Longitudinal Study is a record linkage study of a representative sample of approximately one percent of the population of England and Wales (about 550,000 people). The initial sample, drawn from the 1971 Census, is continually updated to include new members through birth and immigration. Subsequent Census and vital event information is linked to the records of study members through the National Health Service Central Register (NHSCR).

For the calculation of this index, the 1981 cohort was used. Members of the cohort were classified by their place of residence in 1981, and, for those who survived the first 10 years of follow-up, by their place of residence in 1991. Follow-up for this study extended from Census day 1981 to the end of 1997. Using a similar approach to that of Townsend and Carstairs, a deprivation index based on individual characteristics was created for women and men of working age (26-59 and 26-64 years) in both time periods. Those aged under 26 years were excluded from the study to minimise the effects of ageing of the cohort. An index was created dependent upon study members being in Social Class IV and V (partly skilled or unskilled) or I, II and III (professional, managerial and skilled non manual and skilled manual), living in rented or owner occupied housing, with or without household access to a car, and being unemployed or employed. This was based on information provided at the 1981 and 1991 Censuses. The index takes four values:

1. (least deprived) – being social class I, II or III, in owner occupied housing, with car access and employed;
2. having one disadvantageous and three advantageous characteristics, e.g. being employed, but living in owner occupied accommodation, with access to a car and being social class I, II or III;
3. having two disadvantageous characteristics and two advantageous characteristics. e.g. being unemployed and living in rented accommodation, but having access to a car and being social class I, II or III;
4. (most deprived) – having at least three disadvantageous characteristics.

2001 Census-derived deprivation variable for households

As part of the 2001 Census output, ONS has released the univariate table UV67 "Households by selected household characteristics". The table is available for all areas from SOA to national (England & Wales) level, and provides the following information:

- Total number of households in each area;
- Number of households that have no selected characteristic in any dimension;
- Number of households that have a selected characteristic in each 1, 2, 3, or 4 dimensions.

The dimensions and their characteristics are:

- Employment:
  - Any member of the household aged 16-74 who is not a full-time student is either unemployed or permanently sick;
- Education:

- No member of the household aged 16 to pensionable age has at least 5 GCSEs (grade A-C) or equivalent AND no member of the household aged 16-18 is in full-time education;
- Health and disability:
  - Any member of the household has general health "not good" in the year before Census, OR
  - Any member of the household has a limiting long-term illness;
- Housing:
  - The household's accommodation is overcrowded, OR
  - The household's accommodation is in a shared dwelling, OR
  - The household's accommodation does not have sole use of bath/shower and toilet, OR
  - The household's accommodation has no central heating.

This selection of household characteristics does not relate to any National Statistics indicator of deprivation or disadvantage. The classification is independent of the Index of Multiple Deprivation.

Area classifications

In addition to the measures of deprivation that have been discussed above there are various area classifications which "cluster [geographically distant] places together on the basis of various socio-economic commonalities".[27]

The Office for National Statistics Area Classification 1991
- Superceded by The Office for National Statistics Area Classification 2001

The ONS Area Classification provides a general purpose summary indicator of the characteristics of each LA and HA in Great Britain. Using information collected at the 1991 Census, it classifies each LA into a hierarchal structure of one of six Families, 12 Groups and 34 Clusters (HAs are only categorised into Families and Groups) on the basis of 37 separate socio-demographic variables. The general choice of variables for the classification was determined by inclusion of:

- variables to represent the main dimensions of the 1991 Census data (demographic; employment and socio-economic; household composition and housing) bearing in mind the general-purpose use of the classification;
- variables used in one or both of the 1971 or 1981 Office of Population Censuses and Surveys (OPCS) area classifications, *or* nearest equivalent variables, *or* a replacement which improves the classification process;
- variables available for the first time from the 1991 Census, such as ethnic group or limiting long-term illness, with potential significance for area classification.

The classification is based on LAs as they existed on Census Day in 1991 and on HAs as of 1 April 1994.

The ONS Area Classification is not actually an index of deprivation but an indicator of "socio-economic similarity and difference between areas".[28] However, the term "deprivation" is used as a general descriptive term to refer to the values of a group of five variables which form part of the classification and which characterise generally poor socio-economic circumstances. These variables are: the standardised rate of limiting long-term illness; the percentage of children with a single parent; the percentage of dependants with a lone carer; the unemployment rate; and the percentage of households without a car. Authorities with high values for these variables are deemed to be the more socio-economically deprived.

The ONS Area Classification is used extensively for resource allocation and performance management purposes by the NHS and Department of Health.

The Office for National Statistics Area Classification 1991: Revised for Authorities in 1999 and further revised for Health Authorities in 2001

In 1999, ONS recalculated the ONS Area Classification to LA boundaries as of 1 April 1998 and HA boundaries as of 1 April 1999 following large organisational changes. In June 2001, ONS produced a further revision of the Area Classification for HAs to take account of the boundary changes that occurred on 1st April 2001. On that date the number of HAs in England was reduced from 99 to 95.

The revised version is not a new classification scheme. It has been compiled using the same method and approach as the original 1991 version, and the same 37 component variables from the 1991 Census. None of the data have been updated. ONS has simply attempted to reaggregate the data used in the classification to reflect the new LA and HA boundaries. The revision has, however, produced a slightly different classification solution. The clusters of similar authorities and the average characteristics for these clusters have necessarily changed as the LAs and HAs have changed. There is therefore little direct comparability with the results of the original classification. However, ONS has, where possible and where appropriate, retained some of the same names for the Families, Groups and Clusters within the classification.[29, 30]

The Office for National Statistics Area Classification 2001

In October 2003, ONS published a new Area Classification scheme for based on the 2001 Census. This was followed by the publication of the Classification for PCOs and wards in June 2004. The selection of variables for the classification followed similar principles to that used for the 1991 version. All possible Census variables available at the time, including all the variables used in the 1991 classification and new variables available for the first time, were

considered. These were reduced in number to the minimum necessary to adequately describe the six main dimensions of Census data (demographic structure, household composition, housing, socioeconomic character, employment, and industry sector). Four methods were used to reduce the set of indicators:

- If an indicator didn't add anything to the classification or was considered unreliable it was removed;
- In some cases a composite indicator was used to represent similar indicators;
- Indicators that only identified very small sectors of the population were removed;
- If two of the remaining indicators were highly correlated (Pearson Correlation Coefficient > 0.85) one was removed. The rationale is that it is likely that highly correlated variables represent the same population characteristic and that the inclusion of both would result in overrepresentation of those characteristics.

The final data set contains 42 indicators. These indicators are then standardised using an inter-decile range method so that their scales are comparable. Ward's clustering method is then used to group areas. This method starts by treating all the LAs (or wards) under consideration as individual clusters, and then combines clusters in such a way as to maximise the homogeneity within them. It uses every variable for each LA and the squared Euclidean distance is used to measure the similarity. The nature of this technique means that at the end of the process some LAs may be more similar to LAs in other clusters than they are to those in their own. To correct this, a k-means analysis is carried out to reassign any such areas to the cluster to which they are most similar.

The result of the clustering process is a three tier hierarchical classification consisting of 8 Supergroups, 13 Groups, and 24 Subgroups (9, 17, and 26 respectively for the ward level classification). In order to produce a similar hierarchical solution for both LAs and PCOs, the standardisation and clustering process for PCOs is made in reference to the LA indicator distributions and cluster characteristics, i.e. PCOs are assigned to the "closest" of the 24 LA subgroups.

For most purposes the Group tier is considered to be the optimum, and this is the level at which data for ONS Area Classifications (based on aggregating LAs) are presented within the *Compendium.*

The classification is presented based on boundaries as of April 2003.

Further details on the Area Classification and the methods used are available on the ONS web site:
http://www.statistics.gov.uk/about/methodology_by_theme/area_classification/default.asp

Geo-demographic classifications

Geo-demographic classifications are not measures of deprivation, but they are used extensively for marketing purposes to target customer groups. The assumption is made that those households within a defined neighbourhood are likely to have similar lifestyles and buying habits. Like area classifications, they group geographically disparate places together on the basis of certain characteristics that distinguish customer groups. Traditional forms of social classification used for market research were based on the occupation of the head of the household in which they were categorised. Geo-demographics takes this concept further, and can be expressed as the classification of people by the neighbourhood in which they live and the similarity in terms of their ability to consume, behave, or purchase.

ACORN – A Classification Of Residential Neighbourhoods

ACORN is a geo-demographic classification developed by the market analysis company CACI. The classification is built entirely using Census data and includes information on age, sex, marital status, occupation, economic position, education, home ownership, and car ownership. Like the ONS Area Classification, ACORN is based on a three-tier system that classifies people living in Great Britain into one of 6 Categories, 17 Groups, and 54 Types (plus one unclassified in each case). Although not a true measure of deprivation, there are Groups and Types which relate to areas which have such characteristics as high unemployment, a high percentage of elderly with health problems, a high percentage of lone parents, and severe overcrowding.

Super Profiles

Super Profiles is another geo-demographic system, similar to ACORN, and is available from the market analysis company CLARITAS. It categorises households in Great Britain according to the characteristics of the neighbourhood in which they are located. The classification is derived from numerous data sources including the 1991 Census, the electoral roll, credit information, and market research data. The classification is again based on a three-tier system. At the most detailed level there are 160 different Super Profiles Clusters which are ranked in order of affluence. Each Cluster relates to one of 40 Market Groups, which in turn relate to one of 10 Lifestyles.

MOSAIC

MOSAIC is a geodemographic classification, built by Experian, that places each of the 1.4 million unit postcodes in Britain (with an average of 17 dwellings) into one of 52 distinct "lifestyle types" which describe their socio-economic and socio-cultural behaviour. Over 350 variables, taken from source such as the Census, Experian lifestyle surveys, Market Opinion Research Institute's (MORI) Financial Survey, and Family Expenditure Surveys, are used in a cluster analysis to build the 52 neighbourhood types. These can be further aggregated to 12 MOSAIC groups.

Health Action Zones

Health Action Zones (HAZs) are seven-year multi-agency programmes involving the NHS, local government, the voluntary and private sectors, and community groups. The principal aim of HAZs is to tackle inequalities in health in the most deprived areas of England through health and social care service modernisation programmes and by addressing other interdependent and wider determinants of health such as housing, education, and employment.

More than 20 indicators of deprivation were used for the selection of areas as Health Action Zones (HAZs). These included the 1998 DETR Index of Deprivation, Jarman Scores, Townsend Index, Poor Household Index, rough sleepers, psychiatric needs factor, community needs factor, unemployment, school exclusion, SMRs and a weighted health indicator based on *Our Healthier Nation* (OHN) target indicators. The analysis showed that the DETR index was highly correlated with most of the other indicators. But the data on other indicators were helpful when examining closely the characteristics of any particular area.

With a first wave at April 1998 and a second wave at April 1999, 26 HAZs were selected across England. They cover more than 50% of the population living in deprived areas in England. In total, HAZs include 73 LAs and a population of over 13 million people. HAZs differ in complexity and size, covering single to multiple Authorities with populations ranging from just under 200,000 to 1.4 million. HAZs also vary in their local characteristics and consequently different health and service priorities are addressed within each HAZ.

Health Poverty Index (HPI)

The NHS Plan (2000) proposed the production of a Health Poverty Index (HPI). It is intended to underpin national work on reducing health inequalities, combining data about health status, access to health services, uptake of preventive services and the opportunities to pursue and maintain good health (e.g. access to affordable nutritious food, physical activity and a safe, clean environment.) Following extensive consultation, the development of the HPI moved towards the presentation of a limited number of indicators covering each relevant "domain" rather than the production of a single index.

The function of the HPI is to provide key information on differences in the determinants of health and health outcomes between various groupings of society in a summary form. It should also allow these differences to be monitored over time. This will provide feedback and stimulate action on health inequalities.

Work on the HPI development is being funded by the DH and is being carried out by the School of Geography and Geosciences at the University of St Andrews, the Social Disadvantage Research Centre at the University of Oxford, and the South East Public Health Observatory (SEPHO). The current favoured presentation style uses spider charts, bar charts, and data tables to present the information on a web-based tool. A demonstration website has been launched for consultation at: http://www.hpi.org.uk .

Other indices

There are also other less well known measures of deprivation that have been produced, mostly at local rather than national level. For example "Bradford" is a measure of social stress that was developed by Bradford Metropolitan Borough Council in 1993. Another measure is "Oxford"; this is an index developed by a team of researchers at Oxford University using a predictive model of low income[31] (reference Noble et al (1994)). Both these indices and others are referenced in the proceedings of a one-day seminar "Deprivation Indices: Targeting Areas for Policy", held on 24th November 1995 at the University of Birmingham.[32]

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ANNEX 2

CHANGES TO OFFICE FOR NATIONAL STATISTICS MORTALITY DATA

Contents

Original versus final causes of death

When a death occurs, the attending doctor is required to complete a medical certificate of cause of death to be taken to the local Registrar of births and deaths. The majority of deaths are handled in this way. However, for some deaths, the doctor may certify the cause and report the case to the Coroner, or the Registrar may report it.

The conditions mentioned on the death certificate are coded by the Office for National Statistics (ONS) according to the ninth or tenth revision of the International Classification of Diseases[1,2] and the underlying cause of death selected according to WHO rules. In some cases, however, more information on causes of death may become available at a later stage, such that the underlying cause may be subsequently amended.

At present, further details on the causes of death may be obtained by one or other of the following:[3]

- by the certifying doctor indicating on the back of the medical certificate of cause of death that more information can be provided to ONS on request;
- where deaths are certified by Coroners, further information may also be available after post-mortem;
- following an inquest, Coroners submit to ONS details of how a fatal accident occurred;
- Coroners may also provide a final underlying cause of death and verdict much later for an accelerated registration following an adjourned inquest.

Previously, for *Compendia* up to and including the January 2004 provisional release of the *2003 Compendium*, ONS has provided NCHOD with the final amended causes of death. However, due to the introduction of new guidelines on data protection and confidentiality, ONS has subsequently provided only the original causes of death as recorded on the death certificate. The reason for this change is that whilst the original causes of death are part of the public record, the amended causes are not.

For each new edition of the *Compendium,* ONS provides NCHOD with a complete replacement set of mortality records for all the years to be included. The result of this is that all years for which mortality data are presented are affected by the change from final to original causes, not just the years subsequent to the change in practice.

For deaths registered in 2002, the number of deaths where the original underlying cause of death differed from the final underlying cause was 0.2% of the total. The largest change occurred in External Causes, but these were almost always cases where the original underlying cause was an accelerated registration (ICD-10 Y33.9 – See "Coding Of Suicides And Accidental Deaths" below). For the great majority of these deaths, the final underlying cause was homicide. The second largest change occurred in deaths originally coded to pneumonia, where those that changed were distributed among a variety of other causes. The third largest change affected cancer of unspecified site (ICD-10 C80), where the majority of changes were amended to specific cancer sites. There were also some changes in Ischaemic Heart Disease (ICD-10 I20-I25) deaths but most of these are still within the Ischaemic Heart Disease definition.

Neonatal deaths and method for computing rates/ratios

Causes of death are based on the underlying cause, as derived from the medical certificate of cause of death and classified by ONS according to the ninth or tenth revision of the International Classification of Diseases.[1, 2]

Since 1986, the form of the neonatal death certificate does not allow an underlying cause to be assigned. Neonatal deaths (i.e. deaths occurring less than 28 days after birth) are therefore excluded from cause-specific directly standardised rates and cause-specific standardised mortality ratios (SMRs). Post-neonatal deaths in the first year of life are included. SMRs and observed numbers of deaths in *Compendia* since 2000 may differ from those in the previous editions of the Public Health Common Data Set (PHCDS), as in the latter, cause-specific SMRs did not include deaths under one year. This change of practice has minimal effect for most of the causes of death, as they relate mainly to older ages. The exceptions are accidents and infectious and parasitic diseases, where the inclusion of deaths under one year results in a marked increase in the numbers of deaths.

For all-cause directly standardised rates and all-cause SMRs, all deaths in the first year of life are included.

Coding of suicides and accidental deaths

A coroner's inquest may be adjourned because of further investigations or criminal proceedings connected with the death. The death may be registered at this stage as an "accelerated registration", with the result of proceedings notified at a later date. When the results of proceedings are known, the death is re-assigned to the correct code.

Most "accelerated registrations" are initially assigned code ICD-9 E988.8 or ICD-10 Y33.9 (injury by other specified means, undetermined whether accidentally or purposely inflicted). The majority are eventually reassigned to ICD-9 E960-E969 or ICD-10 X85-Y09 (homicide).[4]

If the "accelerated registration" is a transport incident, the death is assigned a code in the range ICD-9 E810-825 (motor vehicle traffic and non-traffic accidents) or ICD-10 V01-V89 (land transport accidents). All transport incidents remain coded to accidents, unless a verdict of homicide is recorded.

ONS guidance on changes to mortality statistics following the move from ICD-9 to ICD-10 for coding the cause of death

From January 2001, information on cause of death in England and Wales has been coded to the Tenth Revision of the International Classification of Diseases.[2] ICD-10 has been implemented on the recommendation of the World Health Organization (WHO) and replaces ICD-9,[1] which has been in use since 1979.

ICD-10 more closely reflects current medical knowledge than ICD-9. It is the most radical change in the ICD for 50 years. This will have an impact on mortality statistics by cause of death, with a discontinuity in the trends for some causes of death.

What has changed in ICD-10?

The main changes are:

- the first character of each code is now alphabetic rather than numeric - this has enabled the expansion of the number of codes to provide for recently recognised conditions and more detail about common diseases;

- some diseases and groups of conditions have been moved between broad groups (ICD chapters) to reflect current ideas of aetiology and pathology;
- there have been several changes to the rules governing selection of the underlying cause of death. There are now only 5 rules instead of 9. The changes in the application of Rule 3 (see below) have the biggest impact.

Changes in the classification of disease

The main changes to the classification of diseases between ICD-9 and ICD-10 are given below, with some examples:

- Changes to the number and structure of Chapters;
  - There are now 20 chapters instead of 18;
  - The nervous system and sense organs chapter from ICD-9 has been split into 3 chapters - nervous system (VI), eye and adnexa (VII), and ear and mastoid process (VIII);
  - Chapters III and IV have changed order and "certain disorders of the immune mechanism" moved from the endocrine chapter (now chapter IV) to the blood chapter (now chapter III);
- Movement of conditions between ICD chapters;
  - Certain "disorders of blood" have moved from the blood chapter (III) to the neoplasms chapter (II);
- New codes for conditions not previously identified separately in the ICD;
  - Mesothelioma and Kaposi's sarcoma now have their own codes;
- Changes in the code assigned to a term in the ICD index (volume III);
- Changes in the inclusion and exclusion notes in the tabular list of the ICD (volume I);
- Changes in linkages between conditions (given in volume II of the ICD);
- Expansion of categories for more detailed classification of conditions of increasing importance;
  - HIV/AIDS has an expanded number of codes in ICD-10 (B20-B24);
  - The detail given about acute myocardial infarction has been increased, with many codes used in ICD-10 where only one had been used in ICD-9;
- Collapsing of categories where distinctions are no longer relevant;
  - Autoimmune disease and connective tissue disease are given the same code in ICD-10, rather than separate ones as they were in ICD-9.

Changes in the underlying cause of death selection and modification rules

The rule that is likely to change cause of death statistics most is Rule 3. This rule allows a condition which is reported in either Part I or II of the death certificate to take precedence over the condition selected using the other coding rules if it is obviously a direct consequence of that condition. In ICD-10 the list of conditions affected by Rule 3 is more clearly defined than in ICD-9 and is also broader in scope. This internationally agreed interpretation is used in the automated coding software produced by the National Centre for Health Statistics (NCHS) in the US, used in England and Wales, Scotland, and an increasing number of other countries.

The impact of this is to reduce the number of deaths assigned to conditions such as pneumonia and to increase the number of deaths assigned to chronic debilitating diseases. In England and Wales, about 20 per cent of deaths mention pneumonia, so the effect of this rule change is large.

These changes have resulted in deaths being coded to different causes of death in ICD-10 compared to ICD-9 and, therefore, data cannot easily be compared across ICD-9 and ICD-10.

Comparing trend data in ICD-10 and ICD-9

To understand trends in cause-specific mortality spanning the change from ICD-9 to ICD-10, one needs to measure the effect of this change on the proportion of deaths attributed to different causes of death. This is done using bridge coding, that is, coding a sample of death certificates independently to both ICD-9 and ICD-10, and comparing the resulting underlying causes of death. The sample used by ONS was all deaths registered in 1999. The first step in this process is to identify equivalent codes or code groups in the two revisions that represent the same causes. In most cases this is not contentious, and the same groupings have been used by various authors and national statistics offices.

Comparability ratios

The results of the bridge coding study are presented as comparability ratios of the numbers of deaths assigned to a given disease or group of diseases in the two revisions. These are simply the ratio of the number of deaths coded to a cause in ICD-10 to the number coded to the equivalent cause in ICD-9. Comparability ratios reflect the net effect of the change. If the ratio is 1, the number of deaths coded to that cause is the same in both revisions. If the comparability ratio is 0.5, half as many deaths have been coded to that cause in ICD-10 as in ICD-9. A ratio of exactly 1 does not mean that assignment of deaths to that category is unchanged. It may mean that the same numbers of deaths have moved into and out of the category.

These comparability ratios can then be used to interpret trends in mortality by adjusting comparisons of cause-specific mortality rates at or near the time of the changeover.

How to apply comparability ratios to examine trends over time

Comparability ratios should be applied to data coded in ICD-9 in order to examine trends over time. For a particular cause, the number of deaths coded to the equivalent cause in ICD-9 in the years being compared should be multiplied by the comparability ratio in order to give an "expected" number of deaths which would have been coded to this cause in ICD-10. The ratio can also be applied directly to rates, to give an "expected" rate.

These ratios are only applicable to England and Wales mortality data from 1993 onwards, when ONS introduced automatic cause coding. Data for years prior to 1993 are not comparable with data for 1993 to 2000. The ratios can only be applied to causes defined by the exact group of ICD codes in both revisions that were used to calculate them. For example, the ratio for Ischaemic Heart Disease (ICD-9 410-414, ICD-10 I20-I25), which is 1.007 for females and 1.005 for males, does not apply to Acute Myocardial Infarction (ICD-9 410, ICD-10 I21-I22), because of movements between these codes and others within the Ischaemic Heart Disease block. The ratio for Acute Myocardial Infarction is 0.926 for females and 0.937 for males.

When are comparability ratios not needed?

Where a comparability ratio is given but its confidence interval includes 1, the difference between the number of deaths allocated to the cause in ICD-9 and ICD-10 is not statistically significant. Adjustment will add little to comparisons over time.

How should ratios be applied to specific age groups?

The comparability ratio can be applied to age-specific data as well as to data for all ages combined. Earlier ONS analyses have shown that there is little difference in the age-standardised rates obtained if age-specific ratios are applied to data instead of an all-age ratio.

However, if the data being examined are to be used to examine trends in specific age groups, it may be sensible to apply age-specific comparability ratios. This is because there may be systematic differences by age in factors affecting the selection of the underlying cause of death. For example, the level of detail provided on a death certificate can differ by age. In addition, the likelihood of a person having chronic conditions varies by age. These conditions may be selected as the underlying cause of death instead of causes such as pneumonia. Where there is a statistically significant pattern in comparability ratios by age, age-specific comparability ratios for the broad age groups under 75, 75-84, and 85+ are available.

Consequences for mortality data in the Compendium

Single year data

Where age-specific death counts and crude age-specific death rates are presented in the *Compendium*, these are for the latest single year for which data are available. In the current *Compendium* this is the year 2003. The data for year 2003 are coded to ICD-10 and, therefore, no adjustments are required.

Pooled data

Standardised mortality ratios, directly age-standardised rates and years of life lost are usually presented in the *Compendium* as the pooled average of the latest 3 years for which data are available. In the current *Compendium* these are the years 2001-2003. The data for these years are coded to ICD-10 and, therefore, no adjustments are required.

Trend data

The *Compendium* presents annual trend data for standardised mortality ratios and directly age-standardised rates for selected mortality indicators. The change from ICD-9 to ICD-10 coding affects the trend data in the following ways:

- Trend data cannot include years prior to 1993, because ONS introduced automated coding in 1993, and the comparability ratios are only valid from this point onwards;
- Years 1993 to 1998 and year 2000 are coded to ICD-9, and require adjustment using the ONS comparability ratios;
- Years 1999 and 2001-03 are coded to ICD-10, and do not require any adjustments;
- For SMRs, it is preferable that an ICD-10 coded year is used as the time period for the standard England & Wales rates. If not, the standard rates used will be less robust, as they will be based on data that have been adjusted using comparability ratios that are themselves estimates with an associated variance. In the current *Compendium* the year 2003 is used as the standard time period.

Making the adjustments

Assumptions

The comparability ratios have been calculated for England & Wales. The use of the ratios to adjust the counts and rates of the sub-national areas presented in the *Compendium* requires the assumption that the ratios do not vary across the areas.

Using all age comparability ratios

Table A2.1 shows a list of the *Compendium* mortality trend indicators for which all age ICD-10/ICD-9 ratios are available. For these indicators, and following ONS guidance, the comparability ratio is used only if it is significantly different from 1. If it is not, a ratio of 1 is used (i.e. no adjustment is made).

The male and female ratios are applied to the observed male and female age-specific death counts as appropriate. Adjusted person counts are the sum of the respective adjusted male and female counts. The resulting set of adjusted counts is then used as normal for all the subsequent SMR or directly age-standardised rate trend calculations. This is shown in the first worked example.

Using age-specific comparability ratios

Table A2.2 shows a list of the *Compendium* mortality trend indicators for which age specific (0-74, 74-85 and 85+) comparability ratios are available. The sex and age-specific ratios are applied to the observed sex- and age-specific death counts as appropriate. Adjusted person counts are the sum of the respective adjusted male and female counts. The resulting set of adjusted counts is then used as normal for all the subsequent SMR or directly age-standardised rate trend calculations. This is shown in the second worked example.

Presentation of trend data

The *Compendium* Mortality Trend Indicators present both the statistic (SMR or directly standardised rate) and the observed death count from which the statistic is derived for each of the years in the trend period. For ICD-9 coded years both the statistic and the observed count given are the adjusted values. The "observed" counts may therefore be non-integer. All counts have been rounded to 2 decimal places, but for presentation purposes are displayed to zero decimal places.

Table A2.1 All age ICD-10/ICD-9 comparability ratios for Compendium *mortality trend indicators*

Indicator Code	Cause Of Death	ICD Definition		Sex	ICD 10/9 Comparability Ratio	Significantly Different From 1?	Adjustment Ratio Used
		ICD-10	ICD-9				
022	Accidents	V01-X59	E800-E928, ex E870-E879	M	0.996	No	1.000
				F	1.011	No	1.000
028	Asthma	J45-J46	493	M	0.964	No	1.000
				F	1.056	Yes	1.056
030	Bladder cancer	C67	188	M	1.008	No	1.000
				F	1.016	Yes	1.016
037	Bronchitis (chronic) and emphysema	J40-J43	490-492	M	0.660	Yes	0.660
				F	0.787	Yes	0.787
038	Bronchitis, emphysema and other chronic obstructive pulmonary disease	J40-J44	490-492, 496	M	1.035	Yes	1.035
				F	1.035	Yes	1.035
040	Cervical cancer	C53	180	F	0.997	No	1.000
043	Chronic liver disease	K70, K73-K74	571	M	1.002	No	1.000
				F	1.030	Yes	1.030
045	Chronic renal failure	N18	585	M	1.081	Yes	1.081
				F	1.079	Yes	1.079
054	Coronary heart disease	I20-I25	410-414	M	1.005	Yes	1.005
				F	1.007	Yes	1.007
057	Hypertensive disease	I10-I15	401-405	M	1.010	No	1.000
				F	1.014	Yes	1.014
061	Diabetes mellitus	E10-E14	250	M	1.044	Yes	1.044
				F	1.042	Yes	1.042
063	Epilepsy	G40-G41	345	M	1.014	Yes	1.014
				F	1.233	Yes	1.233
078	Hodgkin's disease	C81	201	M	1.043	No	1.000
				F	1.079	Yes	1.079
102	All tuberculosis (including sequelae)	A15-A19, B90	010-018, 137	M	1.007	No	1.000
				F	1.080	No	1.000
103	Leukaemia	C91-C95	204-208	M	1.061	Yes	1.061
				F	1.049	Yes	1.049
105	Lung cancer	C33-C34	162	M	0.996	Yes	0.996
				F	0.996	Yes	0.996
113	Suicide	X60-X84	E950-E959	M	1.000	No	1.000
				F	0.999	No	1.000
114	Suicide and injury undetermined	X60-X84, Y10-Y34 exY33.9	E950-E959, E980-E989 ex E988.8	M	1.000	No	1.000
				F	1.000	No	1.000
136	Gastric, duodenal and peptic ulcer	K25-K27	531-533	M	1.000	No	1.000
				F	0.992	No	1.000
152	Malignant melanoma of skin	C43	172	M	0.966	Yes	0.966
				F	0.955	Yes	0.955
153	Other malignant neoplasm of skin	C44	173	M	1.066	No	1.000
				F	1.140	Yes	1.140
155	Malignant neoplasm of stomach	C16	151	M	1.019	Yes	1.019
				F	1.001	No	1.000
175	Land transport accidents	V01-V89	E800-E829	M	1.000	No	1.000
				F	1.005	No	1.000
189	Oesophageal cancer	C15	150	M	1.010	Yes	1.010
				F	1.003	No	1.000

Source: Office for National Statistics

A worked example of the adjustment of ICD-9 based death counts to ICD-10 using all age comparability ratios

Mortality from stomach cancer (ICD-9 151, ICD-10 C16)
In Subject Area A:

Unadjusted Observed Counts (ICD-9 for 1993-98 and 2000, ICD-10 for 1999 and 2001)

Sex	Year	Age Group						
		0	01-04	…	70-74	75-79	80-84	85+
Males	1993	0	0	…	2	2	1	3
	…	…	…	…	…	…	…	…
	1999	0	0	…	1	0	0	0
	2000	0	0	…	1	1	1	0
	2001	0	0	…	1	1	1	2
Females	1993	0	0	…	4	2	1	0
	…	…	…	…	…	…	…	…
	1999	0	0	…	2	2	1	0
	2000	0	0	…	0	3	0	2
	2001	0	0	…	1	3	0	3
Persons (M+F)	1993	0	0	…	6	4	2	3
	…	…	…	…	…	…	…	…
	1999	0	0	…	6	4	2	0
	2000	0	0	…	1	4	1	2
	2001	0	0	…	2	4	1	5

ICD-10/ICD-9 Comparability Ratio Used

Sex	Ratio
Male	1.019
Female	1.000

Adjusted Observed Counts = Unadjusted Observed Counts X Comparability Ratio

Sex	Year	Age Group						
		0	01-04	…	70-74	75-79	80-84	85+
Males	1993	0.000	0.000	…	2.038	2.038	1.019	3.057
	…	…	…	…	…	…	…	…
	1999*	0.000	0.000	…	1.000	0.000	0.000	0.000
	2000	0.000	0.000	…	1.019	1.019	1.019	0.000
	2001*	0.000	0.000	…	1.000	1.000	1.000	2.000
Females	1993	0.000	0.000	…	4.000	2.000	1.000	0.000
	…	…	…	…	…	…	…	…
	1999*	0.000	0.000	…	2.000	2.000	1.000	0.000
	2000	0.000	0.000	…	0.000	3.000	0.000	2.000
	2001*	0.000	0.000	…	1.000	3.000	0.000	3.000
Persons (M+F)	1993	0.000	0.000	…	6.038	4.038	2.019	3.057
	…	…	…	…	…	…	…	…
	1999*	0.000	0.000	…	3.000	2.000	1.000	0.000
	2000	0.000	0.000	…	1.019	4.019	1.019	2.000
	2001*	0.000	0.000	…	2.000	4.000	1.000	5.000

* Years 1999 and 2001 are not adjusted

Table A2.2 Age-specific ICD-10/ICD-9 comparability ratios for Compendium *mortality trend indicators*

Indicator Code	Cause Of Death	ICD Definition		Sex	Age Group	ICD 10/9 Comparability Ratio
		ICD-10	**ICD-9**			
023	Accidental falls	W00-W19	E880-E888	M	0-74	0.954
					75-84	0.664
					85+	0.418
				F	0-74	0.767
					75-84	0.544
					85+	0.335
034	Breast cancer	C50	174-175	F	0-74	1.003
					75-84	1.032
					85+	1.097
047	Colorectal cancer	C18-C21	152-154	M	0-74	1.008
					75-84	1.007
					85+	1.048
				F	0-74	0.999
					75-84	1.017
					85+	1.033
055	Acute myocardial infarction	I21-I22	410	M	0-74	0.944
					75-84	0.941
					85+	0.907
				F	0-74	0.946
					75-84	0.939
					85+	0.894
075	All cancers	C00-C97	140-208	M	0-74	1.013
					75-84	1.028
					85+	1.069
				F	0-74	1.009
					75-84	1.025
					85+	1.050
076	All circulatory diseases	I00-I99	390-459	M	0-74	1.012
					75-84	1.039
					85+	1.069
				F	0-74	1.015
					75-84	1.042
					85+	1.057
101	Infectious and parasitic diseases	A00-B99	001-139	M	0-74	0.995
					75-84	1.137
					85+	1.184
				F	0-74	0.978
					75-84	1.170
					85+	1.236
137	Pneumonia	J12-J18	480-486	M	0-74	0.547
					75-84	0.538
					85+	0.644
				F	0-74	0.545
					75-84	0.568
					85+	0.697
148	Prostate cancer	C61	185	M	0-74	1.008
					75-84	1.031
					85+	1.090
158 (part)	Stroke	I60-I69	430-438	M	0-74	1.073
					75-84	1.147
					85+	1.176

				F	0-74	1.046
					75-84	1.097
					85+	1.100
158 (part)	Hypertension and stroke	I10-I15, I60-I69	401-405, 430-438	M	0-74	1.066
				F	0-74	1.044

Source: Office for National Statistics

A worked example of the adjustment of ICD-9 based death counts to ICD-10 using age-specific comparability ratios

Mortality from pneumonia (ICD-9 480-486, ICD-10 J12-J18)
in Subject Area A:

Unadjusted Observed Counts (ICD-9 for 1993-98 and 2000, ICD-10 for 1999 and 2001)

Sex	Year	Age Group						
		0	01-04	…	70-74	75-79	80-84	85+
Males	1993	0	0	…	4	10	18	38
	…	…	…	…	…	…	…	…
	1999	0	0	…	3	6	4	27
	2000	0	0	…	6	12	14	16
	2001	0	0	…	2	7	8	17
Females	1993	0	0	…	5	12	41	82
	…	…	…	…	…	…	…	…
	1999	0	0	…	0	8	15	36
	2000	0	0	…	9	14	19	57
	2001	0	0	…	2	7	6	26
Persons	1993	0	0	…	9	22	59	120
	…	…	…	…	…	…	…	…
	1999	0	0	…	3	14	19	63
	2000	0	0	…	15	26	33	73
	2001	0	0	…	4	14	14	43

ICD-10/ICD-9 Comparability Ratio Used

Sex	Age Group						
	0	01-04	…	70-74	75-79	80-84	85+
Males	0.547	0.547		0.547	0.538	0.538	0.644
Females	0.545	0.545		0.545	0.568	0.568	0.697

Adjusted Observed Counts = Unadjusted Observed Counts X Comparability Ratio

Sex	Year	Age Group						
		0	01-04	…	70-74	75-79	80-84	85+
Males	1993	0.000	0.000	…	2.188	5.380	9.684	24.472
	…	…	…	…	…	…	…	…
	1999*	0.000	0.000	…	3.000	6.000	4.000	27.000
	2000	0.000	0.000	…	3.282	6.456	7.532	10.304
	2001*	0.000	0.000	…	2.000	7.000	8.000	17.000
Females	1993	0.000	0.000	…	2.725	6.816	23.288	57.154
	…	…	…	…	…	…	…	…
	1999*	0.000	0.000	…	0.000	8.000	15.000	36.000
	2000	0.000	0.000	…	4.905	7.952	10.792	39.729
	2001*	0.000	0.000	…	2.000	7.000	6.000	26.000
Persons	1993	0.000	0.000	…	4.913	12.196	32.972	81.626
	…	…	…	…	…	…	…	…
	1999*	0.000	0.000	…	3.000	14.000	19.000	63.000
	2000	0.000	0.000	…	8.187	14.408	18.324	50.033
	2001*	0.000	0.000	…	4.000	14.000	14.000	43.000

* Years 1999 and 2001 are not adjusted

Further reading

The ICD-10 for Mortality homepage on the National Statistics website: http://www.statistics.gov.uk/ICD-10mortality

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EXPLANATIONS OF STATISTICAL METHODS USED IN THE *COMPENDIUM*

Contents

Crude rates, age-specific rates, and percentages

Calculating rates

The basic measure of the frequency of disease or mortality is the number of events observed. This count is essential information for planning the health services needed to treat and care for the individuals affected. However, to properly investigate the distribution of disease and to make comparisons between different populations, the denominator population-years at risk in which the observed events occurred must also be taken into account. The simplest method to do this is the Crude Rate, where the number of observed events is divided by the population-years at risk. For presentation purposes this rate is usually multiplied by a scaling factor, e.g. 100,000.

For example, a rate, *r*, expressed per 100,000 population is given by:

$$r = \frac{O}{n} \times 100,000$$

where:
O is the number of observed events;
n is the population-years at risk.

If the rate is for a one year time period, *n* is simply the mid-year population estimate for that year. If the rate is for two or more years then *n* is the sum of the mid-year population estimate for each of the years in the period.

Age-specific rates are simply crude rates for specified age groups:

$$r_i = \frac{O_i}{n_i} \times 100{,}000$$

where:
i represents the age group.

Percentages, like crude rates, are a form of ratio and are calculated in a similar way. By definition they are expressed per 100:

$$r = \frac{O}{n} \times 100$$

Confidence intervals for crude rates, age-specific rates, and percentages

Within the *Compendium* the 95% confidence intervals for crude rates and percentages are calculated using the likelihood-based method described by Aitken et al, which is a good approximation of the exact method.[1]

For example lower and upper limits for a rate expressed per 100,000 are given by:

$$r_{LL} = \frac{\exp\left(\ln\left(\frac{r}{1-r}\right) - \left(\frac{1.96}{\sqrt{nr(1-r)}}\right)\right)}{\left(1 + \exp\left(\ln\left(\frac{r}{1-r}\right) - \left(\frac{1.96}{\sqrt{nr(1-r)}}\right)\right)\right)} \times 100{,}000$$

$$r_{UL} = \frac{\exp\left(\ln\left(\frac{r}{1-r}\right) + \left(\frac{1.96}{\sqrt{nr(1-r)}}\right)\right)}{\left(1 + \exp\left(\ln\left(\frac{r}{1-r}\right) + \left(\frac{1.96}{\sqrt{nr(1-r)}}\right)\right)\right)} \times 100{,}000$$

Age standardisation

Introduction

Disease and mortality rates may vary widely by age. Such variation complicates any comparisons made between two populations that have different age structures. For example, consider two areas A and B with equally sized populations and identical crude all-age death rates. At first glance they appear to have a similar mortality experience. Suppose, however, that area A has a younger age structure than area B. Given that mortality rates increase with age, one would expect the older population in area B to experience more deaths. The fact that the two have identical rates means that the younger population in area A must have a relatively worse mortality experience.

The most comprehensive way of comparing the disease experience of two populations is to present and compare their age specific rates. However, when the number of populations being compared increases, the volume of data that needs to be considered quickly becomes unmanageable. What is needed is a single, easily interpreted, summary figure for each population that is adjusted to take into account its age structure. Such summary figures are calculated using age standardisation methods. It may also be desirable to standardise for other variables, such as sex or level of deprivation, that may also potentially confound any comparisons.

Two different methods of age standardisation are used in the *Compendium*, direct and indirect.

- Direct Method: -The rate of events that would occur in a chosen standard population is found by applying the age-specific rates of the subject population to the age structure of the standard population;
- Indirect Method: -The age-specific rates of a chosen standard population (usually the relevant national or regional population) are applied to the age structure of the subject population. This gives an expected number of events against which the observed number of events may be compared.

These are the two most commonly used methods for adjusting rates for comparisons between different populations, and both have advantages and disadvantages.

The preferred method for comparing a number of different populations against each other using the same standard population is the direct method. This is because it preserves consistency between the populations, i.e. if each age-specific rate in area A is greater than each of the corresponding age-specific rates in area B, then the directly standardised rate for area A will always be higher than that of area B irrespective of the standard population used.[2, 3] Indirect standardisation does not necessarily preserve this consistency, and in extreme situations may give misleading results. Indirectly standardised ratios for areas A and B may be compared to the standard but should only be directly compared to each other if the age structures of areas A and B are similar, or the ratio of their age-specific mortality rates is homogenous across the age groups.[4]

Where the ratio between the age-specific rates of areas A and B varies by age group the choice of standard population becomes crucially important for both direct and indirect methods.

One of the disadvantages of the direct method is that it requires that the observed events in the subject population are available broken down by age. If this information is not available the directly standardised rate cannot be calculated. A further problem is that for small subject populations the age-specific rates of the subject population are based on small numbers and consequently are unstable. Small changes in the number of deaths in a particular age band may result in large changes in the directly standardised rate.

The indirect method requires only the total number of observed events in the subject population and may therefore be used in some situations where the direct method cannot. Indirect standardisation is also more stable as it minimises the variance, giving a smaller standard error and narrower confidence intervals. It is therefore more appropriate when dealing with the statistical significance of small populations.

In practice, the two methods generally give comparable results. Moreover, it has been demonstrated by Breslow & Day that when the two do differ it is not necessarily true that the direct method is the more "correct".[5] It has also been shown that the choice of standard population is often as, or more, important than the choice of method.[6, 7]

Direct standardisation

The directly age-standardised rate is the rate of events that would occur in a standard population if that population were to experience the age-specific rates of the subject population. Explicitly:

$$DSR = \frac{\sum_i w_i r_i}{\sum_i w_i} \times 100,000 \quad \text{(expressed per 100,000 population)}$$

where:
w_i is the number, or proportion, of individuals in the standard population in age group i.
r_i is the crude age-specific rate in the subject population in age group i, given by:

$$r_i = \frac{O_i}{n_i}$$

where:
O_i is the observed number of events in the subject population in age group i.
n_i is the number of individuals in the subject population in age group i.

Within the *Compendium* the standard population generally used for the direct method is the European Standard Population (see Annex 5). The age groups used are: Under 1, 1-4, 5-9,…, 80-84, 85+. However, there are exceptions, such as the age-standardised relative survival rates for cancers, where the appropriate England & Wales cancer patient population is used as the standard.

The same standard population is used for males, females, and persons. This means that rates can be compared across gender but also that rates for persons are standardised for age only, and not for sex.

Where directly standardised rates are presented for pooled time periods of two or more years, they have been calculated as the simple average of the individual annual directly standardised rates.

A worked example of the calculation of a directly age-standardised rate

Mortality from all circulatory diseases (ICD-10 I00-I99, ICD-9 390-459), 1999 & 2001 pooled, ages under 75 years

Stage 1: Calculate the age-specific rates in area A

1a – Observed events (deaths) in area A by age group

Year	Sex	0	01-04	05-09	...	65-69	70-74
1999	M	0	1	0	...	65	93
	F	0	0	0	...	35	51
	P	0	1	0	...	100	144
2001	M	0	0	0	...	53	64
	F	0	0	0	...	28	47
	P	0	0	0	...	81	111

1b – Population in area A by age group

Year	Sex	0	01-04	05-09	...	65-69	70-74
1999	M	2,400	9,500	12,200	...	5,800	4,700
	F	2,300	9,000	11,400	...	6,500	5,800
	P	4,700	18,500	23,600	...	12,200	10,500
2001	M	2,200	9,300	11,900	...	5,800	4,700
	F	2,100	9,000	11,100	...	6,400	5,700
	P	4,200	18,300	23,000	...	12,200	10,300

1c – Age-specific rates in area A

Divide each age-, sex- and year-specific observed events by the corresponding age-, sex- and year-specific population (1a/1b). Person rate is the person events divided by the person population.

Year	Sex	0	01-04	05-09	...	65-69	70-74
1999	M	0.00000	0.00010	0.00000	...	0.01121	0.01969
	F	0.00000	0.00000	0.00000	...	0.00543	0.00883
	P	0.00000	0.00005	0.00000	...	0.00816	0.01372
2001	M	0.00000	0.00000	0.00000	...	0.00908	0.01368
	F	0.00000	0.00000	0.00000	...	0.00438	0.00832
	P	0.00000	0.00000	0.00000	...	0.00662	0.01074

Stage 2: Calculate the expected number of events (deaths) in the standard population, given the age-specific rate in area A

2a – Standard population (European Standard Population) by age group

	0	01-04	05-09	...	65-69	70-74
	1,600	6,400	7,000	...	4,000	3,000

2b – Expected number of events (deaths) in the standard population

Multiply each age-, sex- and year-specific rate in area A by the corresponding age-specific standard population (1c x 2a)

Year	Sex	0	01-04	05-09	...	65-69	70-74
1999	M	0.00	0.67	0.00	...	44.85	59.06
	F	0.00	0.00	0.00	...	21.70	26.49
	P	0.00	0.35	0.00	...	32.66	41.15
2001	M	0.00	0.00	0.00	...	36.31	41.03
	F	0.00	0.00	0.00	...	17.51	24.95
	P	0.00	0.00	0.00	...	26.48	32.23

Stage 3: - Calculate the age-standardised annual rates

Sum the expected events across all appropriate age groups to give a total number of expected events for each year and sex. Sum the standard population across all appropriate age groups. Divide the total expected events by the total standard population and multiply by 100,000 to give the age-standardised rate.

Year	Sex	Total Expected 0-74Yrs	Total Standard Population 0-74Yrs	Standardised Rate 0-74 Yrs
1999	M	166	96,000	173.03
	F	73	96,000	75.77
	P	117	96,000	121.53
2001	M	134	96,000	139.94
	F	69	96,000	72.10
	P	100	96,000	104.30

Stage 4: Calculate the average rate

Average rates for pooled time periods are the simple average of the constituent annual rates, e.g. for 1999 & 2001 add the rates for the individual years 1999 and 2001 and divide by 2.

Sex	1999	2001	1999 & 2001
M	173.03	139.94	156.48
F	75.77	72.10	73.94
P	121.53	104.30	112.92

Standardised rates for annual trend data are calculated in exactly the same way using stages 1 to 3. For mortality data for the years 1993-98 and 2000, the observed number of deaths may need to be adjusted as a result of the change from using ICD-9 to ICD-10 to code the cause of death (see Annex 2). The adjusted counts are then used in the rate calculation in the normal way.

Confidence intervals for directly standardised rates

95% confidence intervals for the age-standardised rates were calculated using a normal approximation. Standard errors are obtained using the method described by Breslow and Day,[8] but modified to use the binomial variance for a proportion to estimate the variances of the crude age-specific rates.[9] This method is likely to be unreliable when there are fewer than 50 cases in an area, hence confidence intervals for rates based on less than 50 cases should be viewed with caution. The lower and upper limits for the rates are denoted by DSR_{LL} and DSR_{UL} respectively.

$$DSR_{LL/UL} = DSR \pm 1.96 \times 100{,}000 \times \sqrt{\frac{1}{\left(\sum_{ij} w_i\right)^2} \times \sum_{ij} \frac{w_i^2 \cdot r_{ij}\left(1 - r_{ij}\right)}{n_{ij}}}$$

(expressed per 100,000 population)

where:

w_i is the number, or proportion, of individuals in the standard population in age group i.
r_{ij} is the crude age-specific rate in the subject population in age group i, in year j.
n_{ij} is the number of individuals in the subject population in age group i, in year j.

Confidence intervals are not presented for annual trend data.

Indirect standardisation

Indirect standardisation uses an opposite approach to direct standardisation. Rather than applying the age-specific rates of the subject population to the standard age structure, the age-specific rates of the standard population are applied to the age structure of the subject population. This gives an expected number of events against which the observed number of events may be compared.

The statistic most commonly presented for the indirect method is the standardised ratio - the ratio of the observed to expected events. For presentation purpose, the ratio is usually multiplied by 100. By definition, the standard population used will have a ratio of 100. Ratios above 100 indicate that the number of events observed was greater than expected given the standard rates and ratios below 100 that it was lower.

Examples of standardised ratios used in the *Compendium* include the Standardised Mortality Ratio (SMR) for mortality data and the Standardised Registration Ratio (SRR) for cancer incidence data.

$$SMR = \frac{O}{E} \times 100 \quad = \quad \frac{\sum_i O_i}{\sum_i E_i} \times 100 \quad = \quad \frac{\sum_i O_i}{\sum_i n_i \lambda_i} \times 100$$

where:

O_i is the observed number of events in the subject population in age group i.
E_i is the expected number of events in the subject population in age group i.
n_i is the number of individuals in the subject population in age group i.
λ_i is the crude age-specific rate in the standard population in age group i.

Up to and including the 2003 *Compendium*, the standard rates used for mortality and cancer registration ratios were the appropriate rates for England and Wales. However, the *Compendium* is designed as a resource for the NHS in England and does not include data for Welsh Health Boards. The national average used for comparisons of English organisations is that of England, not England and Wales. It is therefore more appropriate to use England rates as the standard and for *Compendium* releases dating from April 2005 onwards the England rates are used.

The age groups used are: Under 1, 1-4, 5-9,…, 80-84, 85+. Neonatal deaths are excluded for cause-specific mortality indicators (see Annex 2).

For other indicators, other standards and age groupings may be used.

Male and female ratios are calculated using separate male and female standard rates, and cannot be compared. Person ratios are found by summing the separately calculated male and female expected events, rather than by using the standard rates for persons. This means that the person ratios are standardised for both age and sex.

Where ratios are presented for pooled time periods of two years or more, the individual annual standard rates are used to give annual expecteds which are then summed. This means the ratios are standardised for the yearly differences in the standard rates.

Where standardised ratios are used to present trend data, the annual England & Wales rates for the most recent year available are used as the standard. For mortality data this is 2002 and for cancer incidence 2000.

A worked example of the calculation of an indirectly age-standardised ratio

Mortality From All Circulatory Diseases (ICD-10 I00-I99, ICD-9 390-459), 1999 & 2001 Pooled, All Ages

Stage 1: Calculate the standard age-specific rates

1a – Observed events (deaths) in the standard population (E&W) by age group

Year	Sex	0	01-04	05-09	…	80-84	85+
1999	M	28	28	11	…	18,220	22,023
	F	25	12	6	…	23,145	51,728
2001	M	23	11	7	…	18,808	22,342
	F	15	18	10	…	22,562	50,758

1b – Standard population (E&W) by age group (rounded to the nearest 100 for presentation only)

Year	Sex	0	01-04	05-09	…	80-84	85+
1999	M	320,100	1,315,200	1,745,600	…	376,200	268,900
	F	304,600	1,250,300	1,664,100	…	674,400	720,200
2001	M	300,900	1,279,200	1,691,200	…	440,500	282,600
	F	287,900	1,218,200	1,609,400	…	749,500	733,400

1c – Standard age-specific rates
Divide each age-, sex- and year-specific standard observed events by the corresponding age-, sex- and year-specific standard population (1a/1b)

Year	Sex	0	01-04	05-09	…	80-84	85+
1999	M	0.00009	0.00002	0.00001	…	0.04843	0.08190
	F	0.00008	0.00001	0.00000	…	0.03432	0.07182
2001	M	0.00008	0.00001	0.00000	…	0.04270	0.07906
	F	0.00005	0.00001	0.00001	…	0.03010	0.06921

Stage 2: Calculate the expected number of events (deaths) in the subject area A

2a – Population of area A by age group (rounded to the nearest 100 for presentation only)

Year	Sex	0	01-04	05-09	…	80-84	85+
1999	M	2,400	9,500	12,200	…	2,000	1,500
	F	2,300	9,000	11,400	…	3,400	3,800
2001	M	2,200	9,300	11,900	…	2,400	1,600
	F	2,100	9,000	11,100	…	3,600	3,800

2b – Expected events (deaths) in area A by age group
Multiply each age-, sex- and year-specific population of area A by the corresponding age-, sex- and year-specific standard rate (2a x 1c)

Year	Sex	0	01-04	05-09	…	80-84	85+
1999	M	0.21	0.20	0.08	…	96.86	122.85
	F	0.19	0.09	0.04	…	116.69	272.93
2001	M	0.17	0.08	0.05	…	102.47	126.49
	F	0.11	0.13	0.07	…	108.37	262.99

Stage 3: - Calculate the standardised ratio

Sum the sex-specific expected events across all appropriate age groups and across all the years in the time period to give a total number of expected events for each sex. The person total expected is the sum of the male and female expecteds. Divide the total observed events in area A by the total expected events and multiply by 100 to give the standardised ratio.

Year	Sex	Total Observed	Total Expected	Ratio (O/E) x 100
1999 & 2001	M	1,015	1,119	90.7
	F	1,148	1,180	97.3
	P	2,163	2,299	94.1

Standardised ratios for annual trend data are calculated in a similar way, with the exception that the standard rates are calculated for one standard year only, usually the latest year in the trend. The standard rates for this single standard year are used to calculate the expecteds for all years in step 2b. At stage 3 the observed and expecteds are summed for each individual year. For mortality data for the years 1993-98 and 2000, the observed number of deaths may need to be adjusted as a result of the change from using ICD-9 to ICD-10 to code the cause of death (see Annex 2). The adjusted counts are then used in the ratio calculation as outlined above.

Confidence intervals of indirectly standardised ratios

When calculating 95% confidence intervals for indirectly standardised ratios, it is assumed that the standard rates come from a population sufficiently large as to assume their sampling variance is negligible, and that the observed number of events O follows a Poisson distribution. Where the number of observed events is less than 500, the exact upper and lower limits for O are found from a look-up table and used to calculate the respective limits of the ratio. Where the number of observed events is 500 or more, confidence intervals are calculated using the method described by Goldblatt and Jones.[10] The lower and upper confidence limits for the SMRs and SRRs are denoted by SMR_{LL}/SMR_{UL} and SRR_{LL}/SRR_{UL} respectively.

For $O < 500$:

$$SMR_{LL} = \frac{O_{LL}}{E} \times 100 \qquad SMR_{UL} = \frac{O_{UL}}{E} \times 100$$

where:
$O_{LL/UL}$ are the exact lower and upper 95% confidence limits from a standard Poisson distribution table for the total number of observed events O in the subject population.
E is the total expected number of events in the subject population.

For $O \geq 500$:

$$SMR_{LL} = \frac{0.96 + O - 1.96\sqrt{(O + 0.11)}}{E} \times 100 \qquad \text{for } O < 900$$

$$SMR_{LL} = \frac{0.962 + O - 1.9602\sqrt{O}}{E} \times 100 \qquad \text{for } O \geq 900$$

$$SMR_{UL} = \frac{1.94 + O + 1.96\sqrt{O + 0.96}}{E} \times 100$$

Confidence intervals are not presented for annual trend data.

Years of life lost

Years of life lost (YLL) is a measure of premature mortality. Its primary purpose is to compare the relative importance of different causes of premature death within a particular population and it can therefore be used by health planners to define priorities for the prevention of such deaths. It can also be used to compare the premature mortality experience of different populations for a particular cause of death. The concept of YLL is to estimate the length of time a person would have lived had they not died prematurely. By inherently including the age at which the death occurs, rather than just the fact of its occurrence, the calculation is an attempt to better quantify the burden, or impact, on society from the specified cause of mortality.[11] Infant deaths are omitted, as they are mostly a result of causes specific to this age period and have different aetiologies to deaths later in life. The YLL are calculated using the methods described by Romeder and McWhinnie.[12]

Number of years of life lost

The number of YLL is calculated by summing over ages 1 to 74 years the number of deaths at each age multiplied by the number of years of life remaining up to age 75 years.

$$\text{YLL} = \sum_{i=1}^{74} a_i d_i$$

where:
i is the age (by single year).
d_i is the number of observed deaths in the subject population between ages *i* and *i+1*.
a_i is number of years of life remaining to age 75 when death occurs between ages *i* and *i+1*.

Assuming a uniform distribution of deaths within age groups, $a_i = 75 - (i + 0.5)$ and therefore:

$$\text{YLL} = \sum_{i=1}^{74} (74.5 - i) d_i$$

Crude years of life lost rate

The crude YLL rate is simply the number of years of life lost divided by the resident population aged under 75 years. Within the *Compendium* this is expressed by 10,000 resident population:

$$\text{YLL Rate} = \frac{YLL}{n} \times 10,000$$

where:
n is the number of individuals in the subject population aged under 75 years.

Age-standardised years of life lost rate (SYLL)

Like conventional mortality rates, YLL can be age-standardised to eliminate the effects of differences in population age structures between areas, allowing geographical comparisons of premature mortality. The age-standardised years of life lost rate (SYLL Rate) is calculated by the direct standardisation methods described above, using the European Standard Population (see Annex 5). It is expressed per 10,000 resident population aged under 75.

$$\text{SYLL Rate} = \frac{\sum_i \left(w_i \cdot \frac{a_i d_i}{n_i} \right)}{\sum_i w_i} \times 10,000$$

where:
i is the age group (1-4, 5-9, 10-14… 70-74).
d_i is the observed number of deaths in the subject population age group *i*.
a_i is the average number of years of life remaining up to age 75 when death occurs in age group *i* (found by subtracting the midpoint of the age group from 75), i.e. 72, 67.5, 62.5,…, 7.5, 2.5 .
n_i is number of individuals in the subject population in age group *i*.
w_i is the number, or proportion, of individuals in the standard population in age group *i*.

The SYLL rate for the pooled time period is the average of the individually calculated annual SYLL rates.

Cancer survival

The survival time for an individual cancer patient is measured as the number of days between the date of diagnosis and the date of death (or loss to follow-up) and is the basic element of survival analysis. When analysing the survival times of a number of cancer patients, the object is to estimate the probability of survival at a given time since diagnosis, e.g. one or five years. There are three main approaches to estimating cancer survival: crude survival, net survival, and relative survival.

Crude cancer survival

The observed, or crude, survival of a group of cancer patients is simply the estimated probability of survival at the end of some specified period of time. Crude survival takes no account of the cause of death, or of the background risk of death in the general population, to which cancer patients are also subject. A crude survival rate can be interpreted as the probability of survival from cancer and all other causes of death combined.

Net cancer survival

An alternative approach is to use net (or corrected) survival rates, in which we allow the overall risk of death among cancer patients to be separated into two components: a background risk of death applicable to everyone, and an extra risk of death due to cancer, which will form the basis of our cancer survival estimate. The risks are assumed to act independently of one another. Patients certified as dying of cancer then provide the endpoints for analysis, while those certified as dying of other causes are treated as censored observations, in effect, lost to follow-up at the time of death. However, this approach requires agreement on which deaths should be considered attributable to the cancer, as well as suitably accurate information on the cause of death of all cancer patients. Such information is not usually available for population-based survival estimates.

Relative cancer survival

The third approach is relative survival. It also assumes additivity between the risk of death due to the cancer and the background (or competing) risk of death from other causes but, crucially, it does not require information about the cause of death in the cancer patients. If we assume that the two risks of death may be considered to act independently, the impact of other causes of death can be estimated from routine vital statistics, i.e. the mortality rates in the general population from which the cancer patients are drawn.

Relative survival is defined as the ratio of the survival probability observed in a given group of cancer patients to the survival probability that would be expected if they had been subject only to the same overall mortality rates by sex, age, and calendar period as the general population. It is usually expressed as a percentage (e.g. 0.4/0.8=50%), and it can be interpreted as the probability of surviving the cancer in the absence of other causes of death.

$$S_c(t) = \frac{S_o(t)}{S_e(t)} \times 100 \quad \text{(expressed as a percentage)}$$

where:
t is the time since diagnosis at which survival is measured.
$S_c(t)$ is the probability of surviving the cancer.
$S_o(t)$ is the observed survival probability of the cancer patients.
$S_e(t)$ is the expected survival probability of the cancer patients given the mortality rates of the general population.

Overall mortality has a component due to the cancer, but it is not necessary to subtract this component from the calculation. The basis of relative survival is a comparison of mortality in the cancer patients with that of the general population regardless of cause.

Relative survival has become the most widely used technique for exploring the survival of cancer patients in population studies. It is important in analysing survival over long periods, because the extra risk of death related to the cancer tends to decay with time, while the background risk from other causes of death rises inexorably as the surviving cancer patients become older.

Use of life tables in calculating the relative survival rate

The expected survival probability $S_e(t)$ is found using life tables. These tables of the mortality rates of the general population (by sex, single year of age at death, and geographic region) are used to calculate the probability of survival between various ages. The overall expected survival probability is found by applying the age-specific survival probabilities from the life table to the age-specific numbers of cancer patients and summing over all the age groups. This is in effect a form of indirect standardisation.[13]

Following exploratory work on the choice of life table, the Department of Health concluded that regional life tables should be used to reflect background mortality, instead of national life tables used previously, even though the numerical effect is small. There are two main reasons for this choice:

- in a country like England with large regional variation in background mortality, relative survival rates derived from regional life tables are intrinsically more defensible, since they approximate the background mortality of the local population more closely;

- the range of cancer survival rates for NHS Regions based on regional life tables is smaller than the range based on national life tables, and this almost certainly reflects the true range of regional variation in cancer survival more accurately.

Age-standardised relative survival rate

The calculation of the expected survival probability $S_e(t)$ uses a form of indirect standardisation, but this adjusts only for the age-specific mortality from other causes. The excess hazard from the cancer itself is usually age-dependent, i.e. the relative survival rate itself varies with age. If an overall (all-ages) estimate of relative survival for cancer patients is used to compare survival rates for two populations with very different age structures, the results may be misleading. It is therefore desirable to age-standardise the relative survival rates.

Age-adjustment is also important for the analysis of time trends in relative survival. This is because if survival varies markedly with age, a change in the age distribution of cancer patients over time can produce spurious survival trends (or obscure real trends).

Age standardisation of the relative survival rate is performed using the direct method described previously. A full description of the methods used is given by Coleman MP et al[14].

$$DSR = \frac{\sum_i w_i S_i}{\sum_i w_i} \times 100 \qquad \text{(expressed as a percentage)}$$

where:
w_i is the number, or proportion, of individuals in the standard population in age group i.
S_i is the cumulative relative survival rate of the subject cancer patient population in age group i.

The standard population used is the number of persons who were diagnosed with the particular cancer under consideration in England and Wales during the period 1986-90. These were broken down into the following age (at diagnosis) groups:

- 15-69, 70-79, and 80-99 years for bladder and stomach cancers;
- 15-59, 60-69, 70-79, and 80-99 years for colon and prostate cancers;
- 15-49, 50-59, 60-69, 70-79, and 80-99 years for breast and cervical cancers;
- 15-59, 60-69, and 70-99 years for lung and oesophageal cancers.

Male, female, and person relative survival rates are age-standardised using the same person standard population and may therefore be compared against each other. Rates for different cancers, however, are standardised using different standard populations, and in some instances different age groupings, and should therefore not be compared.

Confidence intervals of age-standardised relative survival rate

The 95% confidence intervals are calculated using the same normal approximation approach described above for direct standardisation:

$$DSR_{LL/UL} = DSR \pm 1.96 \times 100 \times \sqrt{\frac{1}{\left(\sum_i w_i\right)^2} \times \sum_i w_i^2 \cdot Var(S_i)}$$

(expressed as a percentage)

where:
w_i is the number, or proportion, of individuals in the standard population in age group i.
$Var(S_i)$ is the variance of the cumulative relative survival rate of the subject cancer patient population in age group i.

Clinical Indicators

The *Compendium* has previously included the following 8 indicators from the larger set of historical NHS Performance Indicators. Some of these indicators have also formed part of the NHS Star Ratings published by the Healthcare Commission.

- CI1A: Deaths in hospital and after discharge within 30 days of surgery (non-elective admissions);
- CI1B: Deaths in hospital and after discharge within 30 days of surgery (elective admissions);
- CI1C: Deaths in hospital and after discharge within 30 days of CABG surgery (all admissions);
- CI2: Deaths in hospital and after discharge within 30 days of emergency admission with fractured proximal femur;
- CI3: Deaths in hospital and after discharge within 30 days of emergency admission with a heart attack (myocardial infarction);
- CI3B: Deaths in hospital and after discharge within 30 days of emergency admission with stroke;
- CI5: Discharge to usual place of residence within 56 days of emergency admission from there with a stroke;
- CI6: Discharge to usual place of residence within 28 days of emergency admission from there with a hip fracture (neck of femur).

Changes in method used for Clinical Indicators

In the June 1999 Clinical Indicator (CI) publications, the indicators listed above were directly standardised for age using the European Standard Population. The indicators were not standardised for sex.

In the July 2000 publication, and in all successive publications, three changes to the previous standardisation method have been made:

- Indirect standardisation is used instead of direct standardisation, and the ratios (and their confidence intervals) are then converted into absolute rates;
- The indicators are standardised for age **and** sex, not just age (Some indicators are also standardised for other factors such as method of admission and/or case type);
- For each indicator, the reference population used for standardisation is the appropriate national number of hospital admissions for that indicator, as opposed to the European Standard Population.

These changes bring the method of standardisation in line with that used for the Scottish and Welsh clinical indicators.

The main reasons behind the change in standardisation method were:

- Indirect standardisation is more robust with small numbers and avoids the distortions caused by direct standardisation based on unstable age-specific rates;
- Indirect standardisation is more flexible to future refinements, such as standardising for other factors, e.g. deprivation or co-morbidity;
- As there are gender variations in health outcomes, person rates need to be standardised for age **and** sex;
- The age distribution of a hospital patient population is different to that of a general population such as the European Standard Population. Hence the former is a more appropriate basis for standardisation within the Clinical Indicators.

Comparison of standardisation methods for Clinical Indicators

The effects of the different methods of standardisation were investigated for each of the Clinical Indicators. Table A3.1. below illustrates an example using indicator CI6 (discharge to usual place of residence within 28 days of emergency admission from there with a hip fracture) for the financial year 2000/01. At this time there were 390 Trusts in England. Of these, 170 Trusts with zero denominators and 25 Trusts with zero numerators (and therefore zero rates) have been dropped from the illustrative analysis. Results are therefore presented for 195 Trusts, of which 24 have denominators less than 10 and numerators less than 6. The table shows the count of how many of these trusts had rates statistically significantly different from that of England for each of the standardisation methods employed.

Table A3.1. Comparison of standardisation methods for clinical indicator CI6 (Discharge to usual place of residence within 28 days of admission from there with a fracture of neck of femur, emergency admission) 2000/01

Standardisation Method	Number of Trusts with rates significantly different to England	
	Significantly Low	Significantly High

Method 1
  Direct standardisation using European Standard
  Population as standard
	127	0

Method 2
  Direct standardisation using England hip fracture
  admissions population as standard
	30	17

Method 3
  Indirect standardisation using England hip fracture
  admissions population as standard
	18	23

Method 1 clearly gives unsatisfactory results, with 127 trusts having significantly low rates and none having significantly high. Indeed, all 195 trust rates were lower than the average rate for England as a whole. There are two reasons for these apparently nonsensical results. Firstly, the European Standard Population is a reflection of the age structure of the general population, and not the age structure of patients being admitted to hospital with a hip fracture. The European Standard Population has a much younger age structure than the patient population, and therefore disproportionately weights the rates that occur in the younger age groups. The rates in these younger age groups are based on smaller numbers and are therefore less stable than those of the older age groups. The second problem is a failure of the direct method to handle the small denominator populations at the trust level. If for a particular age group a trust has a denominator of zero admissions it is effectively missing information on its rate for that age group. When the age specific rates are applied to the standard population the missing rates are treated as zeros, resulting in an artificially low estimate of the overall age-standardised rate. This problem is further compounded by the use of the European Standard Population, as it disproportionately weights those younger age groups that are most likely to have missing age-specific rates.

Calculations for CI6 were repeated using only age groups above 65 years. These age groups contained over 95% of cases for this indicator. This compromise reduced the distorting effects of the differently weighted standard population and the effects of missing age-specific rates at Trust level, but did not eliminate them completely. The resulting England rate was more representative of the Trust rates, but of the 42 Trusts that showed a statistically significant difference from the England rate, all were lower. No Trust had a significantly higher rate.

Using the England hip fracture admissions as the standard population, as in method 2, gives much improved results. The resulting weights given to the age-specific rates are better proportioned, and also reduce the effect of any missing age-specific rates. This is because the age groups that are most likely to have missing rates at Trust level also have relatively small numbers in the standard national admissions population and are therefore given a lower weighting. The results are still not ideal though, with nearly twice as many trusts with significantly low rates than significantly high (30 and 17 respectively).

For method 3, indirect standardisation was used. This eliminates the problem of missing age-specific rates, since when the England age-specific discharge rate is applied to a Trust that has no admissions in that age group, the expected discharges for that age group will be zero - matching the zero observed discharges. The age group therefore contributes nothing to either the total observed or total expected discharges, and does not distort the ratio of the two. The results show that the indirect method gives a better distribution of significantly low and significantly high trust rates. Closer inspection of the results for methods 2 and 3 highlighted the following observations:

- Many of the significantly lower rates from direct standardisation were based on very small numbers. For example, we found three Trusts with 4/5, 2/2, and 3/3 cases being discharged within 28 days, resulting in discharge rates significantly below that of England. In contrast, only results based on large numbers show up as statistically significant with the indirect method. In the case of those three particular Trusts, the corresponding results by the indirect method showed higher (though not statistically significant) discharge rates than the England average, which is what one would have expected.

- Where observed numbers are low, both direct and indirect methods (not surprisingly) give unreliable results. But the results are more plausible with indirect standardisation. For instance, in the case of the Trusts with the ten lowest admission figures (i.e. with 1/1 cases being discharged), the directly standardised rates are low, whereas the indirectly standardised rates are high.

- The direct method gives improbably low rates for some Trusts with low observed numbers, which are often also statistically significant. The indirect method results in more stable rates and wide confidence intervals for

these Trusts.

- This also demonstrates that there is a case for excluding from the analysis Trusts with denominators below a threshold value. A threshold of 50 is used.

In summary the indirectly standardised rates showed less volatility, less bias towards low rates, and fewer "false" differences (especially lower rates) than the directly standardised rates. The indirect method also allows for the possibility of standardising for other possible confounding factors such as sex, deprivation, or case-mix. It would be hazardous to attempt to do this using the direct method, since the problem of low cell numbers and missing specific rates would be compounded further.

Indirectly standardised rates for Clinical Indicators

The Clinical Indicators are calculated using the indirect methods already described above. However, instead of expressing the ratio of observed to expected events as a percentage, it is converted to a rate by multiplying it by the overall crude rate of the standard population. This indirectly age-standardised rate (ISR) is then expressed per 100,000 denominator population or as a percentage depending on the indicator, e.g.:

$$ISR = \frac{O}{E} \times \lambda \times 100{,}000 \quad = \quad \frac{\sum_i O_i}{\sum_i E_i} \times \lambda \times 100{,}000 \quad = \quad \frac{\sum_i O_i}{\sum_i n_i \lambda_i} \times \lambda \times 100{,}000$$

(expressed per 100,000 denominator population)

where:
O_i is the observed number of events in the subject population in age group *i*.
E_i is the expected number of events in the subject population in age group *i*.
n_i is the number of individuals in the subject population in age group *i*.
λ_i is the crude age-specific rate in the standard population in age group *i*.
λ is the overall crude rate in the standard population.

This crude rate multiplication is used in both the Scottish and Welsh clinical indicators and is done in order to produce a more useable and interpretable final value.

Confidence intervals of indirectly standardised rates for Clinical Indicators

In line with recent developments in data analysis within the NHS, both 95% and 99.8% confidence intervals are calculated for each clinical indicator. The lower and upper limits of the confidence interval for the indirectly standardised rate are calculated by finding the lower and upper limits of the standardised ratio and multiplying by the overall crude rate of the standard population. The methods used for determining the lower and upper limits of the standardised ratio are different to those used elsewhere in the *Compendium* and described previously. Rather than using the exact Poisson limits for observed counts of less than 500 and the Goldblatt and Jones[4] approximation for greater counts, Byar's approximation is used in all instances. It is a sufficiently accurate approximation to the Poisson probabilities.[15] The limits are given by:

$$ISR_{LL} = \frac{O}{E} \times \left(1 - \frac{1}{9O} - \frac{Z}{3\sqrt{O}} \right)^3 \times \lambda \times 100{,}000$$

$$ISR_{UL} = \frac{(O+1)}{E} \times \left(1 - \frac{1}{9(O+1)} + \frac{Z}{3\sqrt{(O+1)}} \right)^3 \times \lambda \times 100{,}000$$

(expressed per 100,000 denominator population)

where:
O is the total observed number of events in the subject population.
E is the total expected number of events in the subject population.
λ is the overall crude rate in the standard population.
Z = 1.96 for 95% confidence intervals.
Z = 3.08 for 99.8% confidence intervals.

For indicators such as cancer deaths at home, where the observed event is not rare, the binomial distribution may be more appropriate for use in determining the confidence interval. In such instances, the 95% limits may be estimated by:

$$ISR_{LL} = \frac{r_{LL}n}{E} \times \lambda \times 100$$

$$ISR_{UL} = \frac{r_{UL}n}{E} \times \lambda \times 100$$

(expressed per 100 denominator population)

where:
$r_{LL/UL}$ is the lower/upper limit of the crude rate in the subject population as given in section *"Confidence Intervals For Crude Rates, Age-Specific Rates and Percentages"* above.
n is the denominator at risk in the subject population.
E is the total expected number of events in the subject population.
λ is the overall crude rate in the standard population.

A worked example of the calculation of an indirectly age-standardised rate for Clinical Indicators

CI2: Deaths In Hospital And After Discharge Within 30 Days Of Emergency Admission With Fractured Proximal Femur, Ages Over 65 Years.

Stage 1: Calculate the standard age-specific rates

1a - Observed events (deaths) in the standard population (England admissions) by age group

Sex	65-69	70-74	75-79	80-84	85+
M	24	66	197	270	635
F	45	133	330	531	1,861

1b - Standard population (England admissions) by age group

Sex	65-69	70-74	75-79	80-84	85+
M	695	1,098	1,778	1,877	2,949
F	1,657	3,315	6,514	8,451	16,782

1c - Standard age-specific rates
Divide each age- and sex-specific standard observed events by the corresponding age- and sex-specific standard population (1a/1b)

Sex	65-69	70-74	75-79	80-84	85+
M	0.03453	0.06011	0.11080	0.14385	0.21533
F	0.02716	0.04012	0.05066	0.06283	0.11089

Stage 2: Calculate the expected number of events (deaths) in the subject PCO/Trust A

2a - Denominator population (admissions) of PCO/Trust A by age group

Sex	65-69	70-74	75-79	80-84	85+
M	9	10	20	22	34
F	33	35	76	93	172

2b - Expected events (deaths) in PCO/Trust A by age group
Multiply each age-and sex-specific denominator population for PCO/Trust A by the corresponding age- and sex-specific standard rate (2a x 1c)

Sex	65-69	70-74	75-79	80-84	85+
M	0.31	0.60	2.22	3.16	7.32
F	0.90	1.40	3.85	5.84	19.07

Stage 3: - Calculate the indirectly standardised ratio

Sum the sex-specific expected events across all appropriate age groups to give a total number of expected events for each sex. The person total expected is the sum of the male and female expecteds. Divide the total observed events by the total expected events to give the standardised ratio. Use Byar's approximation to calculate the upper and lower limits of the 95% confidence interval.

Sex	Total Observed	Total Expected	Ratio	Ratio LL	Ratio UL
M	14	13.61	1.0284	0.5617	1.7256
F	40	31.07	1.2875	0.9197	1.7533
P	54	44.68	1.2086	0.9078	1.5769

Stage 4: Calculate the crude rate for the standard population (England admissions)

Sum the standard observed events and standard denominator population across both sexes and all the age groups. Divide the total observed events by the total denominator population to give the standard crude rate.

Sex	Total Observed	Total Denominator	Crude Rate
P	4,092	45,116	0.0907

Stage 5: Calculate the indirectly standardised rate

Multiply the person standardised ratio and its lower and upper limits by the standard crude rate (4 x 5)

Sex	ISR	ISR LL	ISR UL
P	10,961.6	8,234.1	14,302.9

The following indicator has been standardised for the operative procedure (OPCS4 chapter / selective sub-chapters) in additional to age and sex:

- CI1A: Deaths in hospital and after discharge within 30 days of surgery (non-elective admissions).

This has been undertaken to remove differences in these indicators caused by the differences in the case-mix of the patients treated by each trust. The indirect method of standardisation described above was used and the calculation follows closely that of the specific example for hip fractures, but with expected numbers of events being derived for each combination of age group/sex/OPCS4 Chapter. The introduction of the additional factor makes the tables very much larger.

Note: Where data are presented individually for more than one year, one year will be used to provide the national standard rates against which data for all the years are standardised. This is necessary to facilitate comparisons between the years. This base year not only provides the standard rates used to calculate the expected numbers of events, but also the overall crude rate by which the standardised ratios are multiplied to produce the standardised rates.

Assessing whether an organisation or area's rate is significantly different from the national rate

For each indicator, confidence intervals are calculated, at the 95 and 99.8% levels, around each organisation's (or area's) standardised rate. The 95% confidence interval is defined such that the likelihood of the organisation's true rate lying outside these limits is no greater than 5 in 100. The comparable probability for the 99.8% interval is 2 in 1,000.

Comparisons between the two sets of limits and the national rate (for England) assist the interpretation of the data and in particular whether the organisation's rate is significantly different from the England rate. While the estimation of the England rate can itself have some inherent variability e.g. from inaccuracies in measurement, the scale of the numbers involved e.g. number of patients admitted to hospital nationally, usually make any confidence interval around the England rate very small. Thus, we consider the national rate to be at a fixed level, as measured, and for significance to be determined by where the national rate lies when compared to the two confidence intervals for any given organisation.

This defines the following five bands:

A1 -   where the national rate is lower than the lower limit of the organisation's 99.8% confidence interval;

A5 -   where the national rate is higher than the lower limit of the organisation's 99.8% confidence but lower than the lower limit of its 95% confidence interval;

W -   where the national rate lies within the organisation's 95% confidence interval;

B5 - where the national rate is higher than the upper limit of the organisation's 95% confidence interval but lower than the upper limit of its 99.8% confidence interval;

B1 - where the national rate is higher than the upper limit of the organisation's 99.8% confidence interval.

Whether the A1 band shows a performance better (or worse) than the national performance depends on the nature of the indicator. For example, it is likely to show good performance for an organisation to be in the A1 band when considering uptake of service etc., but it is likely to reflect poor performance if this occurred when considering adverse events e.g. readmissions, mortality.

Improvement in performance between years

As well as looking at the current year's rate for any given indicator, it is often informative to see whether there is a year on year improvement in the rate for a given organisation, or across a geographic area. Standardising the indicator across the years is a pre-requisite and the method for doing this has been described elsewhere in this Annex.

The percentage improvement for an organisation is found by calculating the difference between its rate for the current time period and that of a given baseline time period and expressing it as a percentage of the baseline rate. For all indicators a positive percentage represents improvement and a negative percentage represents deterioration. The actual calculation therefore depends on whether an increase or a decrease in the rate represents an improvement.

The relative risk ψ is given by:

$$\psi = \frac{ISR_2}{ISR_1}$$

where:
ISR_1 is the baseline indirectly standardised rate.
ISR_2 is the current indirectly standardised rate.

For indicators where an increase in the rate represents an improvement:

$$\text{Percentage Improvement} = (\psi - 1) \times 100$$

For indicators where a decrease in the rate represents an improvement:

$$\text{Percentage Improvement} = (1 - \psi) \times 100$$

Confidence intervals and banding of the percentage improvement between years

The confidence interval for the percentage improvement is found by calculating the confidence interval of the relative risk ψ. Assuming the observed counts in both years are Poisson variates, exact $100(1-\alpha)\%$ confidence limits for ψ may be found using the equations[16]:

$$\psi_{LL} = \frac{\left(\dfrac{O_2}{O_2 + (O_1 + 1) F_{\alpha/2}(2O_1 + 2, 2O_2)} \right) E_1}{\left(1 - \dfrac{O_2}{O_2 + (O_1 + 1) F_{\alpha/2}(2O_1 + 2, 2O_2)} \right) E_2}$$

and

$$\psi_{LL} = \frac{\left(\dfrac{(O_2 + 1) F_{\alpha/2}(2O_2 + 2, 2O_1)}{O_1 + (O_2 + 1) F_{\alpha/2}(2O_2 + 2, 2O_1)} \right) E_1}{\left(1 - \dfrac{(O_2 + 1) F_{\alpha/2}(2O_2 + 2, 2O_1)}{O_1 + (O_2 + 1) F_{\alpha/2}(2O_2 + 2, 2O_1)} \right) E_2}$$

where:

O_1 is the observed number of events in the baseline year.
O_2 is the observed number of events in the current year.
E_1 is the expected number of events in the baseline year.
E_2 is the expected number of events in the current year.

$F_{\alpha/2}(v_1,v_2)$ denotes the upper $100_{\alpha/2}$ percentile of the F distribution with v_1 and v_2 degrees of freedom.

Once the limits of the relative risk ψ_{LL} and ψ_{UL} have been calculated they can be used to calculate the limits of the percentage improvement. Note that for indicators where a decrease in the rate represents an improvement the upper and lower confidence intervals of the relative risk give the reverse limits of the percentage improvement, i.e.:

For indicators where an increase in the rate represents an improvement:

$$PI_{LL} = (\psi_{LL} - 1) \times 100 \qquad \text{and} \qquad PI_{UL} = (\psi_{LL} - 1) \times 100$$

For indicators where a decrease in the rate represents an improvement:

$$PI_{LL} = (1 - \psi_{UL}) \times 100 \qquad \textit{and} \qquad PI_{UL} = (1 - \psi_{LL}) \times 100$$

The limits of the relative risk can also be used to band the percentage improvement according to its level of statistical significance. Two confidence intervals (this time with 90% and 95% confidence) are used to compare the relative risk with its null hypothesis value of 1 and the improvement shown by an individual organisation, or across a particular geographic area is attributed to one of six bands as defined:

A - significant improvement (where the 95% confidence interval does not span 1.0, and there is positive improvement in the indicator),

B - moderate improvement (where the 95% confidence interval spans 1.0 but the 90% confidence interval does not, and there is positive improvement in the indicator);

C - some improvement (where the 90% confidence interval spans 1.0 and there is some positive improvement in the indicator);

D - some deterioration(where the 90% confidence interval spans 1.0 and there is some deterioration in the indicator);

E - moderate deterioration (where the 95% confidence interval spans 1.0 but the 90% confidence interval does not, and there is some deterioration in the indicator);

F - significant deterioration (where the 95% confidence interval does not span 1.0, and there is some deterioration in the indicator).

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ANNEX 4

HOSPITAL EPISODES STATISTICS (HES) – CONSTRUCTION OF CONTINUOUS INPATIENT (CIP) SPELLS AND ASSESSMENT OF DATA QUALITY

Contents

Overview

This document describes the construction of continuous inpatient (CIP) spells that are used as the basis for all the Hospital Episode Statistics (HES) based indicators in the *Compendium*. There are two sections. 'Section A' describes the methods used in CIP spell construction, whilst 'Section B' describes the algorithms for creating 'caution marks' (measures of the data quality for each organisation and each indicator).

Section A: Construction of CIP spells

Introduction

This is a technical document describing how CIP spells are constructed from data in the Hospital Episode Statistics system. HES data are stored in episode form (an episode being a single period of

care under one consultant) and in financial year groups (1st April to 31st March). This document describes the methods by which these episodes are linked into CIP spells.

The HESID (unique patient identifier) field is derived **(described in the HESID construction summary section)** and CIP spells are then constructed using relevant episodes **(see the section on CIP spell linkage for details).** Prior to this linkage, duplicate episodes are removed **(see the section on duplicate removal)**. Clinical indicators (CIs) that include deaths outside hospital require Office for National Statistics (ONS) deaths data to be linked to the specific CIP spells for these indicators **(see section on ONS linkage for details)**. Other useful spell information is stored within each CIP spell to make it easier to produce the indicators **(see indicator specifications or the section on derived fields for details of these fields)**.

What makes this spells data-set different from standard HES?

The linked data-set described in this document is used to create all *Compendium* indicators and includes many derived fields, both at episode level, and spell level.

Finished HES episodes (mostly fields relevant to Compendium indicator analyses) are extracted from all HES years beginning with the last quarter of 1997/98 (i.e. episodes finishing from 1st January 1998) through to the most recent quarter available. Over 150 million episodes are therefore processed.

A number of non-standard fields are derived, prior to the episodes being linked into spells crossing all years. Further derived fields are then created at spell level **(see the section on derived fields for details)**. The final data-set is tailor-made to support all *Compendium* indicators. The patient identifier (HESID) is mapped to correspond to the current central HESID index ensuring that episodes from different HES years can be linked into a CIP spell.

Financial year 'views' of the data are created by analysing all episodes having start or end dates falling within the 13-month period commencing three months prior to the period start date (e.g. from 1st January YYYY), and finishing six months after each period end (e.g. to 30th September YYYY+1). From this pool of episodes it is possible to construct not only the CIP spells that fall entirely within the year, but also the vast majority of those that straddle either the year start, or end. For example a two episode CIP that starts with an admission in March and finishes with a discharge in May, could well have a first episode end date prior to the start of the financial year. However, as the second episode of the CIP finishes within the year, both episodes must be included in the year view, within a 2-episode completed spell. This technique therefore ensures that all CIP spells, apart from a very small number relating to long stay patients, are fully constructed. The CIP spell in this example would also appear, in full, in the earlier financial year – however it would not be double-counted due to appropriate filters being applied by specific indicators **(see indicator specifications and section on *'Where CIP spells are created'* for details).**

Standard HES exists in individual financial year blocks, and only episodes can currently be queried.

The provision of CIP spells alongside standard HES episodes is now being implemented by the HES team. These 'HES spells' are created using an algorithm similar to a previous version of the one described in this document. However the HES spells will only exist in financial year blocks, without linking between years, and will include unfinished records. This does not give the same level of cross-year comparability as the linked spells file. Unlike the spells universe accompanying standard HES, the spells used for NHS Choices Indicators are created using exactly the same methods as the spells dataset described in this document.

Other differences between this linked data-set and standard HES spells include:

- Standard HES does not support reliable quarterly analysis due to the boundaries of each financial year. The linked file overcomes this problem.
- Standard HES cannot support standard readmissions analysis where the discharge occurs in March. If a standard 28 day readmission indicator is required, the denominator based on standard HES can only include spells with discharges up to 4 March, as data for admissions after 31 March are not available. The linked file overcomes this issue.
- Standard HES does not, as a rule, have patient identifiers (HESID) updated to reflect recent additions to the central HESID index **(see the section on HESID construction for details)**.
- Standard HES does not link episodes between years, so "broken" CIP spells will be created at the start, and end of the financial year.
- Standard HES spells include unfinished episodes, which are known to be unreliable and have therefore been excluded from the linked file (achieved by including two quarters of finished episodes from the following year).
- Standard HES will not usually have residence-based fields mapped to the latest boundaries for all years **(see the section on derived fields for details)**.

- Standard HES is not expected to include deaths data from later HES episodes **(see the section on ONS linkage for details)**.

The spells described in this document are able to support a wider range of queries than standard HES can, and spells fields can be added when required. The resulting data-set is also structured in such a way that it is possible to run analyses over differing periods, i.e. analyses can be done on calendar years using the same data-set.

HESID construction summary

Overview
This section describes the means by which episodes are compared to determine which relate to the same patient. In order to identify episodes that relate to a single patient, a HESID value is assigned to every episode. If the patient identifying information recorded on two episodes is thought to belong to the same patient, the same HESID is assigned to both. Therefore, the HESID is effectively a HES patient identifier.

Patient HESID index
A patient HESID index is used to record the HESIDs that have been assigned to combinations of the data items involved in the matching steps outlined below. There is only one patient HESID index, which is independent of the data years, to facilitate linking of episodes across data years. The information from an episode is added to this index only if there are sufficient valid data items to involve the episode in one of the matching steps outlined below. Otherwise, the episode can never be matched with any other episode, and so is assigned its own unique HESID value. Note that if an episode includes enough information to attempt a match, but no match is found, the episode details are still added to the patient HESID index, because another episode may match it at some later date. For each HESID in the index, there is a corresponding LAST_ACTIVITY_DATE that contains the date where the last activity for that HESID within the HES datasets was recorded. This field is later used during Mortality Processing

The matching algorithm is applied only to entries in the patient HESID index described above. Therefore, before matching is attempted for a data year, all relevant combinations of patient identifying items from the episodes for that data year are added to the patient HESID index, if the combinations are not already recorded. This approach ensures that both the new episodes and all previous HESID entries are involved in the match, and that previous HESIDs are reconsidered in the light of the information from the new episodes. Once the matching process is complete, the resulting HESIDs in the patient HESID index are assigned to the episodes of the data year. In outline, the matching process involves three main steps.

- The first step attempts to match episodes using the following patient identifying information:
  SEX: Sex
  DOB: Date of birth
  NEWNHSNO: NHS number.

- The second step then attempts to match episodes using:
  SEX: Sex
  DOB: Date of birth
  HOMEADD: Postcode
  PROCODET + LOPATID: Local patient identifier within provider.

- The third step then attempts to match episodes using:
  SEX: Sex
  DOB: Date of birth
  HOMEADD: Postcode

As a general rule, matching is attempted only if all of the values required by that step are non-null and valid. The third step will only match records together if Step 1 does not determine that the records should not be matched and if one or more NEWNHSNO (NHS Number) in the records to be matched is null.

Due to the requirement for HESID compatibility across multiple data-years, a new field "HESID3C" is created prior to linking episodes, and is then used as the main patient identifier. This simply makes sure that all years of data have patient identifiers updated to match the patient identifiers which are current in the central "HESID index".

Duplicate removal

It has become evident that episodes are often duplicated (or appear multiple times) in the HES system. These episodes would compromise the quality of the CIP spells' construction, and are therefore removed.

The method for removing duplicates is defined as:-
Order all episodes in the financial years (FY) episodes data by the fields listed below (in the order shown).
If one or more consecutive episodes are identical on the fields listed below then use the one with the most recent SUBDATE, discarding all others.

Fields used during identical matching:

HESID3C (HESID mapped consistently across all years using the latest central patient HESID index)
FYEAR
EPISTAT DESCENDING (note that only finished episodes exist in the current dataset)
EPISTART
EPIORDER
EPIEND
ADMIDATE
ADMIMETH
ADMISORC
CLASSPAT
DIAG_1-20 (DIAG_1-14 before 2007/2008 and DIAG_1-7 before 2002/2003)
DISDATE
DISDEST
DISMETH
EPITYPE
HATREAT
MAINSPEF
OP_DTE_1-24 (OP_DTE_1-12 before 2007/2008 and OP_DTE_1-4 before 2002/2003)
OPER_1-24 (OPER_1-12 before 2007/2008 and OPER_1-4 before 2002/2003)
PROCODET
PROCODE3
RESRO
ROTREAT
TRETSPEF

We have removed NEWNHSNO, RESHA and STARTAGE from previous specifications as they are derived from, or are fields which are used in HESID construction.

Derived fields

Some generally useful information is stored from key points in a CIP spell. Extra fields are also created for each indicator that requires non-standard fields. See the individual specifications for details of these fields.

General spell information:

- RESPCTC   PCT of residence (postcode derived).

- RESPCTO   PCT of residence – old boundaries (postcode derived).

- RESLADSTC   Local authority district of residence (postcode derived).

- RESSTHAC   Strategic Health Authority of residence (postcode derived).

Both of these fields are derived in all years by looking up the postcode using the postcode reference data for the most recent FY. If the postcode is not found, then they are set to NULL.

- SPELLRESLADSTC   A copy of the RESLADSTC field. For each CIP spell, this field is populated by RESLADSTC from the earliest episode in a CIP spell where a valid code was found, else set to NULL.

- SPELLRESPCTC   A copy of the RESPCTC field. For each CIP spell, this field is populated by RESPCTC from the earliest episode in a CIP spell where a valid code was found, else set to NULL.

- PROCODETC   Populated by PROCODET for 2003/04 or later, and PROCODE3 earlier. To ensure the same list of organisations exists in each year a number of rules exist: General rule: if a provider code ends '-X', 'TC' or 'T1' then only he first three characters are used to determine PROCODETC. Special case: if PROCODET = RXF09 then PROCODETC = RXF.

    IF FYEAR >= 2003/04
        IF FYEAR = 2005/06
            IF the first three characters of PROCODET =RXK
            THEN PROCODETC = RXK
            IF the first three characters of PROCODET =RG3
            THEN PROCODETC = RG3
        END

        IF FYEAR = 2006/07
            IF the first three characters of PROCODET = RCZ
            THEN PROCODETC = RCZ
            IF the first three characters of PROCODET = RW9
            THEN PROCODETC = RW9
            IF the first three characters of PROCODET = NT7
            THEN PROCODETC = Matching SITECODE
        END

        IF the first three characters of PROCODET =899
        THEN PROCODETC = 899
        IF the first three characters of PROCODET = RJD
        THEN PROCODETC = 'RJD'
        IF the first three characters of PROCODET = RN5
        THEN PROCODETC = 'RN5'

        OTHERWISE
        PROCODETC = PROCODET
    END
    IF FYEAR < 2003/04
        IF FYEAR < 2003/04 AND PROCODE3 in (8A1,8CV)
        THEN PROCODETC = PROCODE
        IF FYEAR = 2002/03 AND PROCODE3 in (8A4,8CR,8CW)
        THEN PROCODETC = PROCODE
        IF FYEAR = 2002/03 AND PROCODE3 in (8C4)
        THEN PROCODETC = 8C437

        OTHERWISE
        PROCODETC = PROCODE3
    END

    Note: This is not a mapping exercise, it is necessary largely because of the move between PROCODE3 and PROCODET.

- SPELL_DISDATE   Discharge date from last episode in a CIP spell. If this is NULL then the EPIEND from the last episode.

- SPELADMIDATE   Admission date from first episode in a CIP spell. If this is NULL then the EPISTART from the first episode.

- SPELL_DISMETH   Discharge method from last episode in a CIP spell.

- READMIN   Number of days to the first following CIP spell that starts with an EPIORDER of '1' (in first episode) for same person, set to blank if a following spell for the same person is not found.

- READMETH — Admission method of first episode in the first following CIP spell that starts with an EPIORDER of '1' (in first episode), set to blank if a following spell for the same person is not found.

- READMAIN — Main specialty of the first episode in the first following CIP spell that starts with an EPIORDER of '1' (in first episode), set to blank if a following spell for the same person is not found.

- READDIAGP — Primary diagnosis from the first episode in a readmission spell.

- READPROCODETC — Provider code from the first episode in a readmission spell.

- READTYPE — Episode type of the first episode in the first following CIP spell that starts with an EPIORDER of '1' (in first episode), set to blank if a following spell for the same person is not found.

- CFLAG — Equals 1 if a diagnosis of cancer or a record of chemotherapy is found anywhere within an FCE for that patient (HESID) with an admission date within 365 days prior to the admission date of the CIP spell. Cancer is defined as International Classification of Diseases version 10 codes C00-C97, D37-D48, Z511.

- PBCV2 — Programme Budgetary Code Version 2. Derived mainly from primary diagnosis. Episodes are assigned to one of 69 groups (programme budget categories, subcategories including 1 group indicating invalid diagnosis coding.

- SDGROUP — Index of multiple deprivation score (IMD 2007) grouped into 7 bands (values 1 through 7). This is derived from the patient's postcode and assigns a deprivation score for the geographical area in which the patient lives, to the patient. If no IMD lookup can be found, a value of 8 is assigned. For patients who were not resident in England, a value of 9 is assigned (grouping not applicable). If a group cannot be determined because the postcode was not recorded, a value of 10 is assigned.

- SDGROUP5 — Index of multiple deprivation score (IMD 2007) grouped into 5 bands (values 1 through 5). See SDGROUP, above, for other values.

- HESID3C — See the section 'HESID Construction Summary' for details. HESID3C is the current HESID based on the patient HESID central index at the time of building the database.

CIP spells linkage method

A CIP spell is defined as a continuous period of inpatient care within NHS or Independent providers. It may include a transfer from one provider to another. Episodes with a matching HESID are assumed to relate to the same patient.

The following description refers to the example of HES data given below and illustrates how CIP spells are linked:

Episodes that are put forward for linkage (after duplicate removal) into CIP spells will be sorted by HESID, FYEAR, EPISTAT DESCENDING, EPISTART, EPIORDER, and EPIEND.

Episodes which do not start or end in the yearly data-set are excluded from consideration for inclusion in CIP spells, the data-set date range is from 1 January YYYY – 30 September YYYY+1.

To determine when the episode after a CIP spell has occurred (i.e. the end of the CIP spell) the following procedure is used. Starting with the second episode, progress down the list asking the following questions:

If the episode order is not "1"
and the previous episode discharge method is not between "1" and "5" (inclusive)
and the HESID is the same as the previous episode's HESID
then
it is not the end of the CIP spell, continue to the next episode;

Else
If the previous episode's discharge destination is between '51' and '53' (inclusive) **OR** the admission source of current episode is between '51' and '53' **OR** admission method of current episode is '81'
and HESID is the same as the previous episode's HESID
and episode order is '1'
and admission date is valid (i.e. a positive number of days since 31/3/1990)
and the previous episode's discharge date is valid (i.e. a positive number of days since 31/3/1990)
and admission date minus the previous episode's discharge date is <= 2 (includes negatives)
then
it is a transfer, continue to the next episode;

Else
it is the end of the CIP spell.

Spells which span financial year boundaries are included, in full, in each financial year they span. A spell is considered to be in a financial year if its admission date (SPELADMIDATE) and discharge date (SPELL_DISDATE) indicate that the spell should exist in the year.

Note: The algorithms are reviewed annually in the light of experience. For example, data files containing the nine-year data set (FY 1998/99 – 2006/07) were based on a previous version of the above algorithm and have been updated for FY1998/99 - FY2007/08 analysis.

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Example of HES data used for CIP spells linkage

Data Sorted by these fields in this order	HESID	345	345	345	345	345	345
	FYEAR	2002	2002	2003	2003	2003	2004
	EPISTAT (DESC)	3	3	3	3	3	1
	EPISTART	10 Feb 2003	12 Feb 2003	22 Feb 2003	14 April 2003	23 March 2004	24 March 2004
	EPIORDER	1(*)	2	3	1(*)(**)	2	3
	EPIEND	12 Feb 2003	22 Feb 2003	14 April 2003	23 March 2004	24 March 2004	--
	ADMIMETH	21	21	21	81(**)	81	81
	ADMISORC	19	98	98	52(**)	98	98
	ADMIDATE	12 Feb 2003	12 Feb 2003	12 Feb 2003	14 April 2003	14 April 2003	14 April 2003
	DISDATE	-	-	14 April 2003	-	-	- (as unfinished)
	DISMETH	8	8	1	8	8	-
	DISDEST	98	98	52(**)	98	98	-
	STARTAGE	65	65	65	66	66	66
	RESPCTC*	5E1	5E1	5E1	5E1	5E1	5E1
	RESLADSTC*	00AL	00AL	00AL	00AL	00AL	00AL
Other columns with fields relating to operations, diagnoses etc, as appropriate for the indicator		…					
Comments		HESID must be the same for these episodes to be in the same CIP spell. Otherwise it is the end of the spell.					
*		EPIORDER = 1 signifies first episode in a provider spell.					
**		Transfer occurs as: (Previous Disdest = 51,52,53 or next admimeth = 81 or next admisorc = 51,52,53) AND the next episode has: same HESID AND EPIORDER = "1" AND ADMIDATE (next episode) minus DISDATE (current episode) <= 2.					

RESSTHAC, RESLADSTC and RESPCTC are looked up in the postcodes file released in November 2006.

ONS deaths linkage

All deaths indicators include deaths that occur after discharge. As the HES Database does not contain information about deaths that occur after discharge, deaths data from the Office for National Statistics (ONS) is obtained and linked to the HES data.

Two tables are created, one containing information about deaths recorded within HES (DISMETH = 4) referred to as HESID_PSEUDO_MORTALITY and one containing the information received from ONS know as ONS_MORTALITY

A) HESID_PSEUDO_MORTALITY

HESID_PSEUDO_MORTALITY contains the following fields from HES:
    HESID
    DOD: recorded as the DISDATE (discharge date) of each episode in HES with a DISMETH (discharge method) = 4 or EPIEND (Episode End Date) of the episode where the DISDATE is invalid.

If duplicate HESIDs exist within this table, the record with the latest SUBDATE (submission date) is used and the other records for that HESID are deleted. If records have the same HESID and subdate, the record with the latest DISDATE is used and the other records are deleted. If duplicates still occur, the record with the highest EPIKEY is used.

B) ONS_MORTALITY

The death data received from ONS is linked to the HESID index and stored to the ONS_MORTALITY table using the following method:

The matching process involves <u>two</u> main steps, which are the same as Steps 1 and 3 used for the matching of entries within the Patient HESID Index and rely on information recorded during the Patient HESID matching process. All of the notes that apply to the matching are as described for HESID above.

The first step (which corresponds to the first step of the Patient HESID matching process) is "driven by" NHS Number, and attempts to perform a match using the following further patient identifying information used to "check" the matches:

- o SEX   Sex   (Exact match)
- o DOB   Date of Birth   (Partial match)
- o NEWNHSNO   NHS Number   (Exact match)
- o HOMEADD   Postcode

The second step is driven by Date of Birth, and uses the following for checks:

- o SEX   Sex   (Exact match)
- o DOB   Date of Birth   (Exact match)
- o HOMEADD   Postcode   (Partial match)
- o NEWNHSNO   NHS Number

However, as a general rule, matching is attempted only if all of the values required by that step are non-null and valid.

A match will only occur when the LAST_ACTIVITY_DATE recorded against the matched HESID is not later than the 3 days after the date of death.

Unlike the HESID matching (which matches as many records as possible), the intention is to link at most one death to each HESID. Therefore, it becomes possible to rank matches, and use only the best one for each HESID. The ranking of matches (within the context of the above two steps) is as follows, where each match is "exact" unless specified otherwise:

1. NHS Number, Sex, Date of Birth, and Postcode;

2. NHS Number, Sex, and Date of Birth;

3. NHS Number, Sex, Date of Birth (partial match), and Postcode;

4. NHS Number, Sex, and Date of Birth (partial match);

5. NHS Number and Postcode;

6. Date of Birth, Sex, and Postcode, where the NHS Number does not contradict the match (i.e. where either the HESID or the ONS Mortality record (or both) has no valid NHS Number), and the Date of Birth is not 1st January (01/01/yyyy);

7. Date of Birth, Sex, and Postcode, where the Date of Birth is not 1st January (01/01/yyyy).

Whenever an attempt is made to assign more than one date of death to a single HESID, the best match (the one with the lowest rank) above is used. In the event of two matches with equal rank, the details associated with the <u>later</u> date of death are used. To support this, a Mortality Match Rank is recorded as part of the HESID Mortality data.

Depending on the steps used during the HESID matching, an ONS Mortality record may match more than one HESID. In the absence of any definitive way of deciding which one is correct, the inconsistency is simply ignored, and the single death is applied to every matching HESID.

Match Rank 5 is present so that the algorithm is not totally dependent on Date of Birth and Sex. However, note that it still does <u>not</u> allow matching of mortality date to any activity record that does not have a valid Sex and/or Date of Birth, because such a record is not represented by Patient Match Keys in the Patient HESID Index.

C) Combine HESID_PSEUDO_MORTALITY and ONS_MORTALITY to create the MORTALITY_MASTER table

These two tables containing Date of Death data linked to HESID are combined to create a master list of deaths information. This is done by appending the HESID_PSEUDO_MORTALITY information to the ONS_MORTALITY table

The next stage is to remove all duplicate HES IDs from the appended file.

Where pseudo and ONS mortality records share the same HESID and do not contradict each other, the pseudo-record is removed. Where there is a contradiction between the two records, the pseudo-death record takes preference except when the date of death in the ONS record is between 0 and 3 days prior to the date of death in the pseudo-death record. In this case the ONS record will be used and the other removed. This is because patients may be officially discharged on a later date from death (i.e. after a weekend).

D) Apply this information to the CIP spells for mortality based indicators:

For each FY, HES/ONS deaths will be linked to the CIP spells data using the following method:

Let CiNX represent any mortality based indicator reference, i.e. 3a, 1c etc.

For CiNX, loop through all the CIP spells that would be counted towards the denominator for the indicator being analysed.

All CIP spells not selected by the above will have the ONS linked fields set to empty for CiNX.

Loop through the selected CIP spells
If the spell is not the last spell for a patient in the selection, set the ONS linked fields as follows: -
    CiNX_OSPELL_DISMETH = SPELL_DISMETH
    CiNX_OSPELL_DISDATE = SPELL_DISDATE
    CiNX_ONSFLAG = 0 (NOT UPDATED)

If the CIP spell is the last for a person within the CiNX selection then:-
    If the spell ends in a death (SPELL_DISMETH=4) then

        CiNX_OSPELL_DISMETH = SPELL_DISMETH
        CiNX_OSPELL_DISDATE = SPELL_DISDATE
        CiNX_ONSFLAG = 0 (NOT UPDATED)

    If the spell does not end in a death look up the HESID in the mortality data. If a match is found then:-
        CiNX_OSPELL_DISMETH = 4
        CiNX_OSPELL_DISDATE = DOD from the mortality file
        CiNX_ONSFLAG = 1 (ONS UPDATED)
    Else (**no match is found, there is no identified death)**
        CiNX_OSPELL_DISMETH = SPELL_DISMETH
        CiNX_OSPELL_DISDATE = SPELL_DISDATE
        CiNX_ONSFLAG = 0 (0 = NOT UPDATED)
    END

END

Note: The algorithms are reviewed annually in the light of experience. For example, data files containing the nine-year data set (FY 1998/99 – 2006/07) were based on a previous version of the above algorithm and have been updated for FY1998/99 - FY 2007/08 analysis.

Where CIP spells are created

In the examples below, "|-----|" represents a single episode.

Episodes are linked across years, each spell which spans a FY boundary will appear, in full, in each year which it spans. Filters on each indicator are used to ensure that the CI reports do not count a CIP spell in one FY and the same CIP spell in another. This is achieved through the use of the following fields: -

- DISDATE of the last episode in the spell - Readmission CI's have a filter on the DISDATE field, ensuring all discharge CIP spells end in the year of analysis.

- EPISTART of the first episode in the spell - Admissions indicators require that that spells start within the year.

- OPDATE_NN (Procedure date) – Procedure based indicators require that the procedure occurs within the year of analysis.

	HES Year 1	HES Year 2	HES Year 3	
Eg 1	|------| included in			CIP spell Year 1.
Eg 2		|------|		CIP spell included in Year 1 and Year 2 (constructed from the finished HES record from year 2).
Eg 3	|------|------|------| included in Year 1 and Year 2.			Three episode CIP spell
Eg 4	|------|------|------| included in Year 1 and Year 2.			Three episode CIP spell
Eg 5	|------|------|------| included in Year 1 and Year 2.			Three episode CIP spell
Eg 6		|------|------|------|		CIP spell included in Year 2.
Eg 7	|--|			CIP spell included in Years 1, 2 & 3 (constructed from the finished HES record from year 3).
Eg 8	|-----|-----|------|------|------|------|------|------|------|------|------|			Eleven episode CIP spell included in Year 1, 2 & 3.

Example CIP spells

Note: Spells are counted to the first valid organisation (LA, PCO) found in the spell (see definition of SPELLRESLADSTC and SPELLRESPCTC).

For trust based counts, the rules are different (i.e. for readmissions indicators we count the spells to the trust of discharge). See individual indicator specifications for details.

The following examples show sample spells that may be included in the indicators. See each indicator specification for a complete list of exclusions.

These examples use the following:
s = valid primary diagnosis as defined in the indicator specification
z = primary diagnosis other than those defined in the indicator specification
y = discharge method of 1-3 (live discharge)
d = discharge method of 4 (death)
e = episode in a CIP spell that starts with an emergency admission
o = first valid organization found in the spell

Example 1: CI1 - Deaths within 30 days of admission with a specified primary diagnosis

A set of three episodes with a primary diagnosis as defined in the indicator specification in the first episode of the CIP spell, ending in a transfer (as defined in the section on CIP spell construction) to another Trust where a further three episodes took place and the patient was discharged alive.
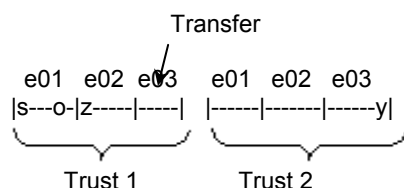
This CIP spell appears in the denominator for the indicator, counted to the organisation 'o', which was looked up via the postcode coded in episode 1, trust 1. If the postcode coded in episode 1, trust 1 did not result in a valid organisation (for instance if it was invalid), then the first valid organisation may have been found in a later episode in the spell (see following examples).

If the diagnosis from trust 1, episode 1 ('s') and trust 1, episode 2 ('z') occurred in the other order, then this spell would not be included, as the valid diagnosis ('s') would not have occurred in the first episode in the spell.

If episode 3, trust 2 ended in death AND the date of death was 0-29 days from the date of admission then the spell will also appear in the numerator. The date and fact of death may be taken from ONS data (see section on ONS linkage).

After episodes are linked into CIP spells, they are then filtered for inclusion in this indicator: -

HESID	Epistart	Epiorder	Epiend	Classpat	Epitype	Admimeth	Admisorc	Admidate	Dismeth	Disdest	Disdate	Startage	Resladst	Diag_1	Comments
49	01/07/2002	1	16/07/2002	1	1	21	19	01/07/2002	8	98		67	00AF	Sxxx	First valid local authority of residence. Valid diagnosis in list for this indicator
49	17/07/2002	2	17/07/2002	1	1	21	19	01/07/2002	8	98		67	00AF	Zxxx	
49	17/07/2002	3	23/07/2002	1	1	21	19	01/07/2002	1	51	23/07/2002	67	00AF	-	
49	23/07/2002	1	23/07/2002	1	1	22	51	23/07/2002	8	98		67	00AF	-	Transfer
49	24/07/2002	2	24/07/2002	1	1	22	19	23/07/2002	8	98		67	00AF	-	
49	25/07/2002	3	26/07/2002	1	1	22	19	23/07/2002	1	19	26/07/2002	67	00AF		Discharged within 0-29 days of admission, not a numerator spell as it does not end in death.

Fields needed for calculating indicator after spell creation:

Fields from the first episode in CIP spell										Fields from the last episode in CIP spell		First Valid RESLADSTC
Sex	Startage	Epiorder	Classpat	Epitype	Admimeth	Admidate	Epistat	Epistart	Diag_1	Disdate	Dismeth	Spellresladstc
1	67	1	1	1	21	01/07/2002	3	1/07/2002	Sxxx	26/7/2002	1	00AF

Example 2: CI1C - Deaths within 30 days of a Coronary Artery Bypass Grafting (CABG) procedure

A set of three episodes, with a CABG procedure in episode 1, ending in a transfer (as defined in the section on CIP spell construction) to another Trust where a further three episodes took place, with a PTCA procedure in episode 1, and the patient was discharged alive.

c=CABG procedure
p=PTCA procedure
h=Heart valve procedure
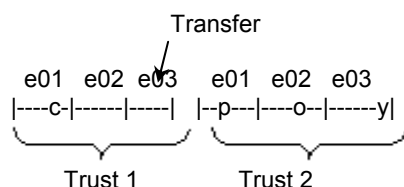
```
                        Transfer
                         /
     e01  e02  e03     e01  e02  e03
 |----c-|------|-----|  |--p---|----o--|------y|
  _____v_____/  _____v_____/
        Trust 1                    Trust 2
```

This CIP spell appears in the denominator for the indicator, counted to the organisation 'o', which was looked up via the postcode coded in episode 2, trust 2.

If the CABG from trust 1, episode 1 and the PTCA from trust 2, episode 1 occurred in the other order, then this spell would not be included, as the CABG must occur first.

If episode 3, trust 2 ended in death AND the date of death was 0-29 days from the procedure date of the CABG, then the spell will also appear in the numerator. The date and fact of death may be taken from ONS data (see section on ONS linkage).

If a heart valve procedure 'h' occurred anywhere in the spell, then the spell would be excluded from the indicator.

Example 3: CI 4 - Emergency readmissions indicators

A set of three episodes, ending in a transfer (as defined in the section on CIP spell construction) to another Trust where a further three episodes took place and the patient was discharged alive. The patient was readmitted as an emergency to trust 2 where a further 3 episode spell took place.

```
           Transfer                Readmission
 Spell 1      /                        \          Spell 2
    e01  e02  e03   e01  e02  e03        \          e01  e02  e03
 |--o---|------|------|  |------|-------|------y|      |------|-------|------y|
  _____v_____/  _____v_____/
      Trust 1                     Trust 2
```
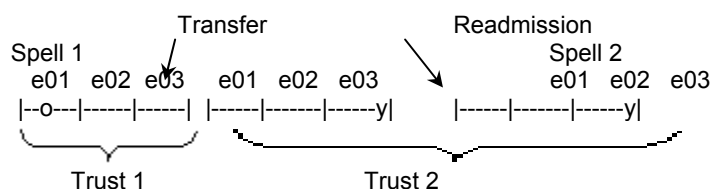
Spell 1 appears in the denominator for the indicator, counted to organisation 'o', which was looked up in episode 1, trust 1.

The number of days between discharge from spell 1 and readmission to spell 2 is calculated to decide whether the emergency readmission should be counted.

Example 4: CI5 - Discharge back to usual place of residence following emergency admission to hospital with a stroke

A set of three episodes with a primary diagnosis of stroke in the first episode of the CIP spell, ending in a transfer (as defined in the section on CIP spell construction) to another Trust where a further three episodes took place and the patient died more than 2 days after the original admission.

```
                    Transfer
                     /
     e01  e02  e03     e01  e02  e03
 |s-----|z-----|-----|  |--o---|-------|------y|
  _____v_____/  _____v_____/
        Trust 1                    Trust 2
```
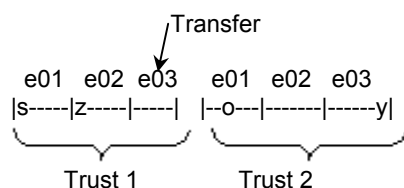
This CIP spell is not counted in the numerator because the patient died. It appears in the denominator and is counted to organisation 'o', which was looked up via the postcode coded in episode 1, trust 2.

If death ('d') occurred within 0-2 days of admission, this spell would be excluded from the denominator as a proxy for those unlikely to be discharged home due to the severity of the condition.

After episodes are linked into CIP spells, they are then filtered for inclusion in this indicator: -

HESID	Epistart	Epiorder	Epiend	Classpat	Epitype	Admimeth	Admisorc	Admidate	Dismeth	Disdest	Disdate	Startage	Resladst	Diag_1	Comments
49	01/07/2002	1	16/07/2002	1	1	21	19	01/07/2002	8	98		67		Sxxx	Valid diagnosis in list for this indicator
49	17/07/2002	2	17/07/2002	1	1	21	19	01/07/2002	8	98		67		Zxxx	
49	17/07/2002	3	23/07/2002	1	1	21	19	01/07/2002	1	51	23/07/2002	67		-	
49	23/07/2002	1	23/07/2002	1	1	22	51	23/07/2002	8	98		67	00AF	-	First valid local authority of residence
49	24/07/2002	2	24/07/2002	1	1	22	19	23/07/2002	8	98		67	00AF	-	
49	25/07/2002	3	26/07/2002	1	1	22	19	23/07/2002	1	19	26/07/2002	67	00AF		Discharged to usual place of residence within 56 days of admission

Fields needed for calculating indicator after spell creation:

Fields from the first episode in CIP spell											Fields from the last episode in CIP spell			First Valid RESLA DSTC
Sex	Startage	Epiorder	Classpat	Epitype	Admimeth	Admisorc	Admidate	Epistat	Epistart	Diag_1	Disdest	Disdate	Dismeth	Spellresladstc
1	67	1	1	1	21	19	01/07/2002	3	01/07/2002	Sxxx	19	26/7/2002	1	00AF

Example 5: CI7(x) – Emergency hospital admissions (primary diagnosis variants)
A set of three episodes with a primary diagnosis as defined in the indicator specification in the first episode of the CIP spell, ending in a transfer (as defined in the section on CIP spell construction) to another Trust where a further three episodes took place and the patient was discharged alive.
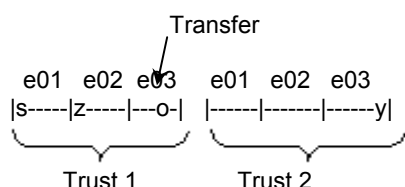
This CIP spell appears in the numerator for the indicator, counted to the organisation 'o', which was looked up via the postcode coded in episode 3, trust 1.

If the diagnosis from trust 1, episode 1 ('s') and trust 1, episode 2 ('z') occurred in the other order, then this spell would not be included as the valid diagnosis ('s') would not have occurred in the first episode in the spell.

After episodes are linked into CIP spells, they are then filtered for inclusion in this indicator: -

HESID	Epistart	Epiorder	Epiend	Classpat	Epitype	Admimeth	Admisorc	Admidate	Disdest	Disdate	Startage	Resladst	Diag_1	Comments
49	01/07/2002	1	16/07/2002	1	1	21	19	01/07/2002	98		7		Sxxx	Valid diagnosis in list for this indicator
49	17/07/2002	2	17/07/2002	1	1	21	19	01/07/2002	98		7		Zxxx	
49	17/07/2002	3	23/07/2002	1	1	21	19	01/07/2002	51	23/07/2002	7	00AF	-	First valid local authority of residence
49	23/07/2002	1	23/07/2002	1	1	22	51	23/07/2002	98		7	00AF	-	Transfer
49	24/07/2002	2	24/07/2002	1	1	22	19	23/07/2002	98		7	00AF	-	
49	25/07/2002	3	26/07/2002	1	1	22	19	23/07/2002	19	26/07/2002	7	00AF		

Fields needed for calculating indicator after spell creation:

	Fields from the first episode in CIP spell								First Valid RESL ADSTC
Sex	Startage	Epiorder	Classpat	Epitype	Admimeth	Admisorc	Epistart	Diag_1	Spellresladstc
1	7	1	1	1	21	19	1/07/2002	Sxxx	00AF

The denominator for CI7 and its variants is taken from population estimates (see indicator specifications).

Example 6: CI7(x) - Hospital procedures (procedure or procedure/diagnosis variants)

This example relates specifically to CI7o (Hospital procedures: Lower limb amputations in diabetic patients), which is a procedure & diagnosis variant.

A set of three episodes with a diagnosis of diabetes in the second episode of the CIP spell, ending in a transfer (as defined in the section on CIP spell construction) to another Trust where a further three episodes took place, during which a lower limb amputation was coded and the patient was discharged alive. The diagnosis and procedure can be in any order in any episode in the spell.

a=lower limb amputation
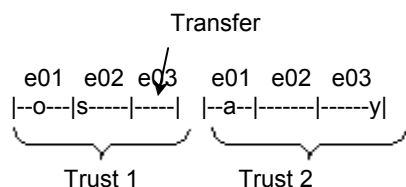
```
                          Transfer
          e01  e02  e03        e01  e02  e03
          |--o---|s-----|-----|   |--a--|-------|------y|
               ⎵_____⎵        ⎵_____⎵
                 Trust 1             Trust 2
```

This CIP spell appears in the numerator for the indicator, counted to the organisation 'o', which was looked up via the postcode coded in episode 1, trust 1.

After episodes are linked into CIP spells, they are then filtered for inclusion in this indicator: -

HESID	Epistart	Epiorder	Epiend	Classpat	Epitype	Admimeth	Admisorc	Admidate	Disdest	Disdate	Startage	Resladst	Diag_NN	Oper_NN	Comments
49	01/07/2002	1	16/07/2002	1	1	21	19	01/07/2002	98		7	00AF	-	-	First valid local authority of residence
49	17/07/2002	2	17/07/2002	1	1	21	19	01/07/2002	98		7	00AF	Sx xx	-	Valid diagnosis in list for this indicator
49	17/07/2002	3	23/07/2002	1	1	21	19	01/07/2002	51	23/07/2002	7	00AF	-	-	
49	23/07/2002	1	23/07/2002	1	1	22	51	23/07/2002	98		7	00AF	-	Ax xx	Transfer. Valid procedure in list for this indicator
49	24/07/2002	2	24/07/2002	1	1	22	19	23/07/2002	98		7	00AF	-	-	
49	25/07/2002	3	26/07/2002	1	1	22	19	23/07/2002	19	26/07/2002	7	00AF			

Fields needed for calculating indicator after spell creation:

Fields from the first episode in CIP spell								First valid RESLADST, Diagnosis and Procedure*		
Sex	Startage	Epiorder	Classpat	Epitype	Admimeth	Admisorc	Epistart	Diag_NN	Oper_NN	Spellresladstc
1	7	1	1	1	21	19	1/07/2002	Sxxx	Axxx	00AF

* The procedure and diagnosis could have occurred in any procedure / diagnosis position in any episode in the spell. The procedure, diagnosis and RESLADSTC do not have to occur in the same episode as each other.

For ci7(x) procedure variants, the algorithm is as in Example 6 but without the requirement for any specified diagnosis to be coded.

The denominator for CI7 and its variants is taken from population estimates (see indicator specifications).

Section B: Data quality: construction of caution marks

Data quality requirements

All the indicator data files contain caution marks for each organisation for each year. These flag whether issues concerning data quality (DQ) should be taken into account when interpreting indicator values. There are three types of criteria applied to the data in creating these caution marks. The first is completeness, a measure of whether records have valid codes in the data fields used for the calculation of the indicators. The second is coverage, which is a measure of whether the HES data for the organisation are in line with the previous or following years' data. Low coverage can indicate that data are missing from HES, while high coverage can indicate undetected partial duplication of records (e.g. where updated and incomplete versions of the same record are retained). Exact duplicates are removed from the HES data before data quality is assessed. The third criterion, death coding, only applies to indicators involving deaths. The death coding measures whether episodes ending in death have a valid diagnosis. This is also a proxy for completeness of the operative procedures fields. As there is no other direct way of testing this, it is assumed that organisations with poor completeness of diagnoses in such records will have poor completeness of operative procedure coding. The three components will be explained further in the following sections.

In addition to the three measures of data quality, further marks are supplied to assist with comparisons over time. These include small numbers marks 'N' where the denominator is considered to be low (<200 for generic indicators, <50 for condition-specific indicators), and 'D' where either the numerator or the denominator is considered to be below the data disclosure threshold (0-4). A mappings file has been produced specifically to underpin the provider (trust) data **(see the section on Provider Mappings for details).**

Selection of episodes for the DQ caution marks components

Different episode selections apply to the data completeness and death-coding component of different indicators, i.e. different selections of data, as shown in table 1. Coverage applies equally to all the clinical indicators.

Table 1: Selection of episodes by data completeness, coverage and death-coding

	Conditions (HES code in brackets)	Data completeness for each indicator (see table 2 for codes)					Coverage[1]	Death Coding 1a/1b/1c/1d	Death Coding 2a/3a/3b	Death Coding VFM
		1a/1b/1c/1d/4b	VFM/10	2a,2b,3a,3b,5,6	9(x)/7(proc) day case excluded	All other indicators				
Episode type	General (1)	√	√	√	√	√	√	√	√	√
	Delivery (2)	√	√				√	√		√
	Birth (3)						√			
Episode status	Finished (3)	√	√	√	√	√	√	√	√	√
	Unfinished (1)									
Patient classification	Ordinary admissions (1)	√	√	√	√	√	√	√	√	√
	Day cases (2)		√		√		√			√
	Mothers and babies (5)	√	√				√	√		√
Discharge method	Deceased (4)							√	√	√

Data quality component: data completeness

Testing for data completeness involves the measurement of the proportion of episodes with invalid/missing values in the fields used in the clinical indicator (CI) constructions. Each CI uses a different selection of episodes and fields, hence the data completeness component has a different specification for each indicator (see table 2). If any of the fields in that episode contain missing or invalid data relevant to HESID construction, spell linkage or the CI's construction, that whole episode is marked as having invalid/missing data, but only for that CI.

Total numbers and percentages of episodes with missing/invalid values are produced by organisation (SHA, PCO, LA, TRUST) for each clinical indicator and year.

Selection of episodes and fields evaluated

The fields scanned in the data completeness component can be grouped in three sets:
- Construction of HESID.
- Construction of spell linkage.
- Additional fields in the CI's construction.

Note 1: Some fields that are involved in the HESID construction or in the CI's construction are not assessed in the data completeness component. This is due to the following reasons:
- Operation date – opdte_nn: although used in the specification of some of the CIs, it can be replaced by episode start date or admission date if it is missing.
- Subsidiary diagnosis – diag_nn: not essential anywhere, but if present and valid it will be used to identify cancer cases.
- Treatment specialty – tretspef: is only used to backfill mainspef and is not used for data completeness as mainspef covers it.
- Local patient Id - Lopatid: Although it is used in the HESID construction there is no invalid value.

Note 2: Newnhsno[2] & Resladstc/Postdist[3] is a combined check, which marks an episode as invalid when both Newnhsno and Resladstc/Postdist are missing/invalid. The construction of HESID requires that either the NHS number or the postcode is valid. If both are invalid the algorithm will not be able to match the patient over time. HESID is used to identify readmissions and construct CIP spells for all CIs. Also NHS number and postcode are needed to link the ONS death data with the hospital episodes for death indicators.

---

[2] NHS number
[3] Resladstc is local authority district, Postdist is postcode district.

Table 2: Summary of fields and episode selection used in data completeness for each clinical indicator

√	Fields used in the HESID construction hence apply to all the CIs
√	Fields used in the spells linkage construction hence apply to all the CIs
√	Additional fields used in the CI's construction
*	Field tested for validity only where it contains a code and appears in a finished episode.

List of fields used in the download for clinical indicator

CIs included	Clinical indicator short name	Selection (only FINISHED (epistat = 3) episodes are included. Applies to all indicators	Startage	Sex	Newnhsno & Resladst	Admimeth	Admidate	Admisorc	Disdate	Dismeth	Disdest	Epistart	Epiend	Epiorder	Oper_1-24	Diag_1	Mainspef
CI1a/b	Death within 30 days of surgery (non-elective admissions)	classpat = 1,5, epitype = 1,2	√	√	√	√	√	√	√	√	√	√	√	√	√	√	
CI1c	Death within 30 days of a heart bypass operation	classpat = 1,5, epitype = 1,2	√	√	√	√	√	√	√	√	√	√	√	√	√		
CI4a	Emergency readmission to hospital following discharge (adults)	classpat = 1, epitype =1	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
CI4f	Emergency readmission to hospital following treatment for a fractured hip	classpat = 1, epitype = 1	√	√	√	√	√	√	√	√	√	√	√	√		√	√
CI9ef and other CI9(x) indicators	Readmission to hospital following a psychiatric discharge(adults/older people)	classpat = 1,2, epitype =1	√	√	√	√	√	√	√	√	√	√	√	√		√	√
Value For Money Indicator	Deaths within 30 days of admission	classpat = 1,2,5, epitype = 1,2	√	√	√	√	√	√	√	√	√	√	√	√		√	
CI7(x) diagnosis variants	Admissions for selected ICD codes	classpat = 1, epitype = 1	√	√	√	√	√	√	√	√	√	√	√	√		√	
CI7(x) procedure variants (no daycase)	Admissions for selected OPCS4 codes	classpat = 1, epitype = 1	√	√	√	√	√	√	√	√	√	√	√	√	√		
CI7(x) procedure variants (inc daycase)	Admissions for selected OPCS4 codes	classpat = 1,2, epitype = 1	√	√	√	√	√	√	√	√	√	√	√	√	√		
CI7(x) procedure and diagnosis variants	Admissions for selected OPCS4 and ICD10 codes	classpat = 1 epitype = 1	√	√	√	√	√	√	√	√	√	√	√	√	√	√	

Methodology for assessing missing/invalid data

The method for assessing whether a particular field contains missing or invalid data is summarised in table 3 below.

Table 3: Methodology for assessing missing/invalid data by field.

Field	Missing/invalid data	Criteria
Sex	**= 0 (Not known)**	
Startage - *Age at start of episode*	**Null**	
Newnhsno[4] - *NHS number* **&** **Resladst[5] - *Local authority district* Together with** **Postdist –*Postcode district***	**Missing/invalid NHS number[6]** = Y (Not known) **Missing/invalid but not 'ZZ99' (mainly non-UK resident, see note below)**	
Admimeth - *Method of admission*	**= 99 (Not known)**	
Admidate - *Admission date*	**Not between 1/1/1930 and end of stated financial year**	
Admisorc - *Source of admission*	**= 99 (Not known)**	
Disdate - *Discharge date*	**Not within stated financial year**	**Dismeth between 1 and 5 and epistat = 3 (finished)**
Dismeth - *Method of discharge*	**= 9 (Not known)**	**Epistat = 3**
Disdest - *Discharge destination*	**= 99 (Not known)**	**Dismeth between 1 and 5 and epistat = 3**
Epistart - *Episode start date*	**Not between 1/1/1930 and end of stated financial year**	
Epiend - *Episode end date*	**Not within stated financial year or epiend<epistart**	**Epistat = 3**
Epiorder - *Episode order*	**= 99 (Not known)**	
Oper1_24 - *Operative procedures #1-24*	**= & (Not known)**	**Epistat = 3**
Diag_1 – *Primary diagnosis*	**= R69X[7], R95-R99[8] or 6th character = 'A'[9]**	**Epistat = 3**
Mainspef - *Main specialty*	**= & (Not known)**	

Note: The postcode field is a sensitive data item and its access is very restricted. To check its validity derived fields are used: Resladst (Local authority district) and Postdist (Postcode district). Resladst equal to 'Y' identifies all missing/invalid postcodes. Records from patients who are non-UK resident do not have a UK postcode and are not considered to be failures. These records need to be excluded from the selection of invalid/missing records. This is done selecting Postdist different from 'ZZ99'. Birth records (EPITYPE=3, patients aged less than 3 months at the start of the episode (STARTAGE), episodes with a diagnosis in the range Z311,Z312,Z313,Z318 and episodes with a procedure code of Q383 or one starting with Q13 are excluded from this validity check.

The primary diagnosis check looks for unknown causes of morbidity (R69X) and mortality (R95-R99). It also looks for asterisks. Some diagnosis codes (dagger) need to be completed with another diagnosis as the secondary diagnosis (asterisks). Asterisks codes are identified by an 'A' at the 6th character, and they should not be in the primary diagnosis field.

Data quality validity marks

As data completeness is assessed specifically for the requirements of each indicator, organisations that do not have adequate data quality for one indicator may pass on another indicator. See table 4 below for data validity

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[4] An episode is marked as invalid if both Newnhsno and Resladst are missing/invalid.

[5] Resladst (local authority district) and Postdist (postcode district) are derived form the postcode. If the postcode is invalid/missing Resladst is set to Y (not known), Postdist is used to exclude patients who are not domiciled on UK.

[6] The modulus 11 algorithm is used to check the validity of the NHS number. In addition, the following known 'dummy' codes are considered to be invalid: XXXXXXXXXX or X00000000X (where X is 0-9), 2333455667.

[7] Unknown and non-specified causes of morbidity.

[8] Unknown and non-specified causes of mortality.

[9] A diagnostic code with an 'A' in the sixth character position identifies an asterisk code, which should not occur in the primary diagnosis.

criteria. The thresholds are applied to the % of episodes missing/invalid data, rounded to the nearest whole number (and similarly for other data quality components).

Table 4: Criteria for assigning data quality validity marks to organisations: completeness

Quality mark	Description	Criteria
+	Adequate data quality validity	20% or less of FCEs with missing/invalid codes for acute readmissions, admissions, and deaths indicators.
Q	Low data quality – caution because of low record quality	More than 20% of FCEs with missing/invalid codes for acute readmissions, admissions, and deaths indicators.

Data quality component: coverage

Coverage tests for a discrepancy in the number of HES records received compared with a previous or following year's HES records. A measure of coverage is calculated for each organisation and each year. In addition to shortfalls in data submitted to HES in any one year, organisation mappings between years could cause the coverage component for an organisation to be flagged.

Table 5: Criteria for assigning data quality validity marks to organisations: coverage

Quality mark	Description	Criteria
+	Adequate data quality coverage	At least 80% coverage for acute and specialist trust readmission, admission and death indicators.
Q	Low data quality – caution because of low record coverage	Less than 80% coverage for acute and specialist trust readmission, admission, and death indicators.

Data quality component: death coding

There is a third DQ caution marks component - death-coding - that checks the quality of the diagnostic coding of death episodes. The data completeness component checks the validity of the main diagnosis for all episodes, including death episodes. However, missing diagnoses in the death episodes could be masked by the other episodes.

There is no direct test for whether the coding of an operation has been missed in a death episode. It is assumed that if the diagnosis coding of a death is missing, any associated operations are missed too. Therefore, the percentage of missing diagnoses on deaths is a proxy for the percentage of missing operations on deaths. If a trust only codes CABG operations for patients that survived, leaving the procedure field for patients who died uncoded, they will appear to have a zero 'in-hospital death rate' for CABG irrespective of the actual death rate.

The death-coding component only applies to those indicators where death is involved, deaths following a heart bypass operation (CI1C) and deaths following non-elective surgical procedures (CI1A) for example. The percentage of episodes ending in death in hospital without a diagnosis must be lower than 20% for those organisations to be considered having adequate data quality for such indicators. See table 6 below for the quality marks criteria.

Table 6: Criteria for assigning data quality validity marks to organisations: Death coding

Quality mark	Description	Criteria
+	Adequate clinical coding of deaths	20% or less of episodes ending in death with primary diagnoses missing/invalid
Q	Low data quality – caution because of poor clinical coding of deaths	More than 20% of episodes ending in death with primary diagnoses missing/invalid

Provider Mappings

A reference file ('*Compendium Annex 4 HES Mappings Dec 08 v1.1*' (www.nchod.nhs.uk, Methods, Annex 4)) has been created, and maintained over time, to show organisational change that affects each provider that appears in the HES database. A 'mapping' may occur when either two providers merge, or a provider splits into two or more parts i.e. the mental health part of a trust may be moved to a different provider. The indicators are analysed based on providers as they exist within each financial year. No attempt is made to reallocate activity if there has been a change between years. The mappings reference file provides an alert plus details of the organizational change between years that should be considered when interpreting trend data.

For each provider code that appears in the PROCODETC field (see indicator specifications or the section on derived fields for details of these fields), the following information is presented for financial years 1998/99 through to 2007/08:

- The Strategic Health Authority (if known) of the provider. This is not year-specific, the SHA does not vary between years.
- The cluster (based on clusters used in the Healthcare Commission star ratings) of the provider. Note that the cluster can very between years, due to re-classifications i.e. because of a mapping. Where a cluster is not known for a provider within a financial year, an attempt to assign one is made by looking at previous/following years labels, mappings, information from external sources and/or case-mix.
- Three flags: does the trust appear in HES in the previous financial year – Y or N; does the trust appear in HES in the current financial year – Y or N; does the trust appear in HES in the following financial year – Y or N.
- Up to six columns for mappings affecting the provider between the financial year and the next financial year.
- Up to six columns for notes relating to the mappings columns.

The following information is taken from this mappings file and used to construct provider level aggregate data:
- The trust cluster label (varies between years).

The following information is taken from this mappings file and presented in indicator output files:
- A flag is added in each year if the trust cluster changes at any time within the 10 year series.
- A flag is added to a year if there is a mapping involving the provider code between the previous and current year, or between the current and following year.

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ANNEX 5

THE EUROPEAN STANDARD POPULATION

The European Standard Population[1] is used to compute directly age-standardised rates. The same population is used for males, females and persons.

Age group	European Standard Population
0	1,600
1-4	6,400
5-9	7,000
10-14	7,000
15-19	7,000
20-24	7,000
25-29	7,000
30-34	7,000
35-39	7,000
40-44	7,000
45-49	7,000
50-54	7,000
55-59	6,000
60-64	5,000
65-69	4,000
70-74	3,000
75-79	2,000
80-84	1,000
85+	1,000
Total	100,000

References

[1] 1991 World Health Annual of Statistics - based on J Waterhouse *et al* (eds). *Cancer Incidence in Five Continents.* Lyon: International Agency for Research on Cancer, World Health Organization, 1976 (Vol. 3, page 456).

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ANNEX 6

GOALS OF *OUR HEALTHIER NATION*

Contents

Introduction

Our Healthier Nation (OHN)[1] is an action plan for tackling poor health, with the twin goals of:

- Improving the health of everyone;
- Improving the health of the worst off in particular – to narrow the health gap.

Rationale for choice of the four Our Healthier Nation *priority areas in 1999*

In order to achieve the overall goals of the strategy, we have to tackle the *four major causes* of preventable ill health and premature death: *cancer*, *circulatory disease* (coronary heart disease, stroke and related diseases), *accidental injury* and *mental illness*. Together they account for around 75 per cent of all deaths in England under the age of 75 years.

Rationale for setting the National Targets for England

To focus attention on the two overarching goals and to stimulate progress in the four priority areas, four specific health outcome targets have been set. The number of national targets has been kept small because *Our Healthier Nation* is about action, not about "number crunching". Targets are a powerful tool for concentrating attention where it is needed. They are not an end in themselves. On their own, targets do not make a strategy, but they can be a way of focusing a strategy. That is what the four national targets are designed to do for *Our Healthier Nation.*

The task was to identify targets which are amenable to action, which are scientifically based, which are sufficiently challenging to instil an urgency of action, and which are achievable by the best performing public health programmes.

National Targets

The *Our Healthier Nation* national targets are:

1. Circulatory diseases
   - To reduce the death rate from heart disease, stroke and related conditions in those aged under 75 years by at least two fifths (40%) by the year 2010.

2. Cancers
   - To reduce the death rate from all cancers amongst those aged under 75 years by at least a fifth (20%) by the year 2010.

3. Accidents
   - To reduce the death rate from accidents among people of all ages by at least one fifth (20%) by the year 2010 and to reduce the rate of serious injury by at least one tenth (10%) by 2010.

4. Mental health
   - To reduce the suicide rate among people of all ages by at least a fifth (20%) by the year 2010.

Target year

1. Mortality targets:
   - 2010 for all four targets (the average of the three years 2009, 2010 and 2011).

2. Serious injury from accidents target:
   - Financial year 2010/11

Baseline year

1. Mortality targets:
   - 1996 for all four targets (the average of the three years 1995, 1996 and 1997).

2. Serious injury from accidents target:
   - the single financial year 1995/96 (the baseline is a single year as it based on large numbers, and there are problems with consistency of definitions for previous years because of the change to ICD-10 coding starting in 1995/96).

Sources of data

1. Mortality targets:
   - Office for National Statistics (ONS) mortality statistics from death registrations. Mortality rates are directly age-standardised to allow for changes in the age structure of the population using the European Standard Population (see Annex 5).

2. Serious injury from accidents target:
   - Hospital Episode Statistics.

Technical definitions for the four targets

1. Cancer:
   - All malignant neoplasms: ICD-10 codes C00-C97 inclusive (ICD-9 codes 140-208 inclusive).
   - Age group: under 75.
   - Target reduction by year 2010: at least one fifth (20%).

2. Circulatory diseases:
   - Includes Heart Disease and Stroke and related conditions: ICD-10 codes I00-I99 inclusive (ICD-9 codes 390-459 inclusive).
   - Age group: under 75.
   - Target reduction by year 2010: at least two fifths (40%).

3. Accidents:
   - Deaths from accidents:
     - ICD-10 codes V01-X59 inclusive (ICD-9 codes E800-E928 excluding E870-E879);
     - Age group: all ages;
     - Target reduction by year 2010: at least one fifth (20%).

   - Serious injury from accidents:
     - Hospital admissions defined by ICD-10 codes as below:
       - Primary diagnosis must indicate an injury, i.e. is in range S00 through T98X.
     - External cause code must be in one of the following ranges:
       - V01 - V99   Transport accidents;
       - W00 - X59   Other external causes of accidental injury (mostly falls).
     - The injury must be sufficiently serious to require a hospital stay of four days or more;
     - Age group: all ages;
     - Target reduction by year 2010: at least one tenth (10%);
     - As some records with a primary diagnosis indicating an injury do not contain a valid external cause code, these codes will be scaled out in proportion to the records with a valid cause code before applying the second rule above. Coding of external cause is consistently improving and this correction will decrease in importance as coding approaches 100%.

4. Suicide
   - Intentional self-harm and injury of undetermined intent excluding verdict pending: ICD-10 codes ICD-10 X60-X84, Y10-Y34 excluding Y33.9 (ICD-9 codes (E950-E959) plus (E980-E989) minus E988.8 - suicide and undetermined injury less inquest adjourned cases).
   - Age group: all ages.
   - Target reduction by year 2010: at least one fifth (20%).
   - Official suicides are those in which the coroner or official recorder has decided there is clear evidence that the injury was self-inflicted and the deceased intended to kill himself. Unofficial suicides or open

verdicts are those where there may be doubt about the deceased's intentions. Research studies show that most open verdicts are in fact suicides. For the purposes of comparisons with other countries, the figures quoted are for official suicides, but for the purpose of measuring overall suicides in England, official suicides and open verdicts are combined.

Changes to coding of mortality data

The World Health Organization maintains a statistical classification of diseases, injuries, and causes of death, which is internationally recognised and used. Hospital episodes are classified using the tenth revision, ICD-10. For the mortality indicators, however, baseline and target rates were set using the ninth revision, ICD-9, that was current in England at that time for coding cause of death. ICD-10 was introduced for coding mortality from the year 2001. This change requires that ICD-9 based rates be adjusted to make them comparable to current and future ICD-10 based rates. This is done by applying ICD-10/9 comparability ratios published by the Office for National Statistics (ONS). Further information on the changes to ONS mortality data and the application of comparability ratios can be found in Annex 2. For accidents and suicide, the differences between ICD-10 and ICD-9 are not statistically significant and no adjustment is necessary. For cancers, comparability ratios of 1.013 and 1.009 were used for males and females respectively. For circulatory diseases, ratios of 1.012 and 1.015 were used for males and females respectively. The adjusted male and female deaths are combined to give the adjusted person deaths used to calculate the adjusted rates. Other consequences of the implementation of ICD-10 are that the definition of accidents has been revised and no longer includes "adverse effects", and a terminological change to suicides, which are now described as intentional self-harm.

Adjustment of 95% confidence intervals for OHN indicator baseline rates

Elsewhere in the *Compendium* the ICD-10/9 comparability ratios have only been used to adjust annual mortality rates. These annual rates are intended for trend analysis and therefore do not include 95% confidence intervals in their presentation. The OHN indicator baseline rates, however, are three-year averages for which the 95% confidence intervals are given. For circulatory diseases and cancers, where the baseline rates have been adjusted, the confidence intervals must also be adjusted. This is not a simple case of applying the ratio to the upper and lower limits. The ratio itself is an estimate of the true underlying ratio and has an associated variance. This additional variance should be taken into account when calculating the confidence interval of an adjusted rate.

The adjusted 95% confidence intervals were calculated using methods outlined by the National Center For Health Statistics, an agency of the US Centers for Disease Control and Prevention.[2] Lower and upper limits are given by:

$$DSR'_{LL/UL} = DSR' \pm 1.96 \times 100,000 \times \sqrt{\frac{1}{\left(\sum_i w_i\right)^2} \times \sum_i w_i^2 \cdot Var(r'_i)}$$

   (expressed per 100,000 population)

where
DSR' is the adjusted directly age-standardised rate
w_i is the number, or proportion, of individuals in the standard population in age group *i*.
r'_i is the adjusted crude age-specific rate in the subject population in age group *i*.
$Var(r'_i)$ is the variance of r'_i.

For male and females rates $Var(r'_i)$ is given by:

$$Var(r'_i) = \left(r_i^2 Var(C_i) + C_i^2 Var(r_i) + Var(C_i) \cdot Var(r_i)\right)$$

where
C_i is the age-specific ICD-10/9 comparability ratio in age group *i*.
$ar(C_i)$ is the variance of C_i.
r_i is the unadjusted crude age-specific rate in the subject population in age group *i*.
$Var(r_i)$ is the variance of r_i and is given by:

$$Var(r_i) = \frac{r_i(1 - r_i)}{n_i}$$

where
n_i is the number of individuals in the subject population in age group *i*.

For person rates the adjusted crude age-specific rates r'_i are a weighted average of the separate male and female adjusted rates. The variance $Var(r'_i)$ is also therefore a weighted average of the separate male and female variances and is given by:

$$Var(r'_{pi}) = \frac{n_{mi}^2 \cdot Var(r'_{mi}) + n_{fi}^2 \cdot Var(r'_{fi})}{\left(n_{mi} + n_{fi}\right)^2}$$

where
Var(r'$_{mi}$)*, Var(r'$_{fi}$*)* and *Var(r'$_{pi}$*)*, are the variances for the male, female and person adjusted crude age-specific rates in the subject population in age group *i* respectively.
n$_{mi}$ and *n$_{fi}$* are the number of male and female individuals in the subject population in age group *i* respectively.

Age-specific ICD-10/9 compatibility ratios were not available for each of the five-year age groups used in the age-standardisation process. Instead, the Under 75 year ratios published by ONS were applied to all the age groups. The confidence intervals produced are therefore based on the assumption that the ICD-10/9 ratio is consistent across the age groups. This is in addition to the general assumption for the adjusted rates that the comparability ratios do not vary across the different areas.

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[1] Department of Health. *Saving Lives: Our Healthier Nation*. London: Her Majesty's Stationery Office, 1999.

[2] National Center for Health Statistics. *A Guide To State Implementation Of ICD-10 For Mortality Part II: Applying Comparability Ratios.* Hyattsville, Maryland: National Center for Health Statistics, 2000.

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ANNEX 7A

METHODOLOGY USED IN THE 2001 ONS AREA CLASSIFICATION OF LOCAL AUTHORITIES

Contents

Introduction

This document outlines the methodology used in the 2001 Area Classification at Local Authority District level. This includes the process undertaken to select a variable set which represents population characteristics captured in the Census and the clustering techniques used to create the classification.

Before the analysis was carried out, the Isles of Scilly was combined with Penwith, and City of London was combined with City of Westminster. This was because of the small populations found in these Local Authorities.

Variable selection

The procedures adopted for the selection of variables were conducted via a series of team meetings using a rigorous and logical approach, designed to gain an efficient representation of the Census data. For any method of classification, the results will depend on the variables used for the analysis. The underlying objective in variable choice was thus to select the minimum number of variables that would adequately represent the main dimensions in the Census data. These have been defined as demographic structure; household composition; housing; socioeconomic character; employment; and industry sector.

Selection procedures

Variables were selected from the 2001 Census Key Statistic tables, as they contain important Census data and they are accessible to the public. The starting point was to consider all possible variables that were available at the appropriate time, then to reduce the data set by a process of elimination. Where possible, all variables that were included in the 1991 classification were considered for the new classification, as well as new variables that were available for the first time.

The initial data set was reduced by three methods. Firstly, if a variable didn't add anything to the classification or was considered unreliable it was removed. For example, answering the religion question in the 2001 Census was optional and may contain missing values. Secondly, in some cases a composite variable was used to represent similar variables, for example the variable "Flats" was used to represent respondents who live in either purpose built or converted flats. Thirdly, variables that only identified very small sectors of the population were removed. It should also be noted that it has not been possible to include some variables which were not available at the time of producing the classification.

A further reduction was made based on the matrix of correlations between variables. If the Pearson Correlation Coefficient between two variables was greater than 0.85, one was removed. It is likely that highly correlated variables represent the same population characteristic, so inclusion of both would result in overrepresentation of certain population characteristics. The final data set contained forty-two variables.

Clustering methods

The cluster analysis method places each area in a group with the other areas to which it is most similar in terms of the forty-two Census variables selected. This enables similar areas to be classified according to their particular combination of characteristics. The classification consists of two parts: a hierarchical classification of supergroups, groups, and subgroups, and an overlapping classification of "corresponding areas". This second part lists the authorities most similar to each authority.

The data were first standardised in order to ensure that the scale of the variables were comparable. In order to create the hierarchical classification, the Ward's Clustering method was adopted followed by the k-means method, which optimises the solution attained. Ward's clustering method uses the Squared Euclidean Distance as a similarity

measure. This was also used to attain the Classification of Corresponding Authorities. Ward's method is well established and has given valid and reliable results in previous ONS classifications. It finds groups which are as homogenous as possible at each level and uses every variable in each Local Authority.

Standardising data

The data were standardised using an Inter-decile Range method. This compares each Local Authority's value, X_i, for each variable to the UK median, X_{med}, and is then divided by the distance between the 90th percentile, X_{90th}, and the 10th percentile, X_{10th}:

$$\frac{X_i - X_{med}}{X_{90th} - X_{10th}}$$

This was considered more appropriate for the distribution of the data than the more frequently used "z-scores" standardisation, and is more robust to outliers than the range standardisation that was used in the 1991 classification.

Distance measure

The Squared Euclidean distance was used to measure similarity between clusters. Two Local Authorities X and Y, are said to be similar if the "distance" between them based on Census characteristics is small. It uses the following formula:

$\sum_i (X_i - Y_i)^2$ where X_i - value of variable i for LA X and Y_i - value of variable i for LA Y

so that the distance between the two Local Authorities is the sum of the squared differences between their values for each and every variable (i=1 to 42).

Ward's clustering method

The method initially treats all 432 Local Authorities as separate clusters, and then combines clusters by maximising the within-cluster homogeneity. To measure homogeneity a within-cluster sum of squares is used. At each step, all possible solutions are considered and clusters are formed using the solution that gives the smallest within-cluster sums of squares. The within-cluster sum of squares that is minimised is also known as the "Error Sum of Squares" (ESS). For each case, the squared Euclidean distance to the cluster means is calculated. As each case initially starts off as a cluster, the ESS is zero. The next step would then form 431 clusters: one cluster of size two, and the others all of size one. The ESS is calculated for all possible solutions and the cluster solution that produces the least ESS is chosen. Then the process is repeated. This continues until there is just one cluster containing all Local Authorities. An agglomeration schedule is produced (see figures) which shows the difference in ESS at each stage. This was used when determining the cut-off points of 8, 13, and 24.

Once the clusters have been formed, a check must be carried out to ensure that each Local Authority is assigned to its correct cluster. Due to the agglomerative nature of the technique, the cluster centroid will have changed at each step, as new districts are added. This might mean that by the end of the process some districts are more similar to districts in other clusters than they are to districts in their own cluster. To ensure that all authorities are in the right cluster, a k-means analysis was carried out. This technique reassigns districts to the cluster with the smallest distance between the district and the cluster centroid. This was carried out at the 24 cluster level and the higher levels of the classification were then created by reassigning LAs using the Ward's solution, starting from the centroids of the 24 k-means clusters.

Contributors

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ANNEX 7B
**FINAL VARIABLE LIST FOR NATIONAL STATISTICS 2001 AREA CLASSIFICATION OF
LOCAL AUTHORITIES**

Contents

The variables are listed under six domains, a short variable "label" precedes the variable description.

Demographic

Age
age 0-4	percentage of resident population aged 0-4
age 5-14	percentage of resident population aged 5-14
age 25-44	percentage of resident population aged 25-44
age 45-64	percentage of resident population aged 45-64

Ethnicity

Indian/Pakistani/ Bangladeshi — percentage of people identifying as Indian, Pakistani or Bangladeshi

Black — percentage of people identifying as Black African, Black Caribbean or Other Black [1]

Country of Birth
Not born in UK — percentage of people not born in the UK

Population Density
Population density — number of people per hectare

Household Composition

Living Arrangements
Separated/ widowed/ divorced — percentage of residents over 16 who are not living in a couple and are separated, widowed, divorced, or were once married [2]

Size/Family
Single person household — percentage of households with one person who is not a pensioner

Single pensioner household — percentage of households which are single pensioner households

Lone parent household — percentage of households which are lone parent households with dependent children

Two adult no children household — percentage of households which are cohabiting couple households with no children

Housing

Tenure
Rent (public)	percentage of households that are public sector rented accommodation
Rent (private)	percentage of households that are private/other rented accommodation

Type and size
Terrace	percentage of all household spaces which are terraced
Detached	percentage of all household spaces which are detached

| Flats | percentage of all household spaces which are purpose built, converted and communal building flats |

Quality/crowding

No central heating	percentage of occupied household spaces without central heating
Household size	average number of rooms per household
People per room	average number of people per room

Socio-Economic

Education

| HE qualifications | percentage of people aged between 16 - 74 with a higher education qualification |

Socio-economic class

| Professional or managerial | percentage of people aged 16-74 in employment working in professional or managerial occupations |
| Routine occupation | percentage of people aged 16-74 in employment working in routine or semi-routine occupations |

Ownership/commuting

Two car household	percentage of households with 2 or more cars
Public transport	percentage of people aged 16-74 in employment who usually travel to work by public transport [3]
Work from home	percentage of people aged 16-74 in employment who work mainly from home

Health and Care

| Limiting long-term illness | percentage of working age population with limiting long term illness [4] |
| Provide unpaid care | percentage of people who provide unpaid care [5] |

Employment

Student	percentage of people aged 16-74 who are students [6]
Unemployment	percentage of economically active people aged 16-74 who are unemployed
Long-term unemployment	percentage of the unemployed who are long-term unemployed [7]
Men working part time	percentage of economically active men aged 16-74 who work part time [8]
Women looking after the home	percentage of economically inactive women aged 16-74 who are looking after the home
Women working part time	percentage of economically active women aged 16-74 who work part time [8]

Industry Sector

Agriculture & fishing	percentage of all people aged 16-74 in employment working in agriculture and fishing
Mining/ quarrying/ construction	percentage of all people aged 16-74 in employment working in mining, quarrying, and construction
Manufacturing	percentage of all people aged 16-74 in employment working in manufacturing
Hotel & catering	percentage of all people aged 16-74 in employment working in hotel and catering
Health/social work	percentage of all people aged 16-74 in employment working in health and social work
Finance	percentage of all people aged 16-74 in employment working in financial intermediation
Wholesale/retail	percentage of all people aged 16-74 in employment working in wholesale/retail trade

Notes

1	Includes Scottish Black for Scottish Unitary Authorities.
2	From Key Statistics Table 03 (Living Arrangements).
3	For Scottish Unitary Authorities, this is percentage of residents who usually travel to work or place of study by public transport.
4	Working age is 16-64 for men and 16-59 for women.
5	Provides at least one hour a week of unpaid care.

6   This includes economically active full-time students and economically inactive students.
7   Unemployed since 1999 or earlier.
8   Part-time is defined as working less than 30 hours a week.

ANNEX 7C
THE 2001 ONS AREA CLASSIFICATION OF LOCAL AUTHORITIES IN ENGLAND: BASED ON 2001 CENSUS DATA

Supergroups	Groups	LOCAL AUTHORITIES (boundaries as of April 2009)	
Cities and Services	Regional Centres	00BR	Salford MCD
Cities and Services	Regional Centres	00BY	Liverpool MCD
Cities and Services	Regional Centres	00CG	Sheffield MCD
Cities and Services	Regional Centres	00CJ	Newcastle upon Tyne MCD
Cities and Services	Regional Centres	00DA	Leeds MCD
Cities and Services	Regional Centres	00HB	Bristol UA
Cities and Services	Regional Centres	00HG	Plymouth UA
Cities and Services	Regional Centres	00HN	Bournemouth UA
Cities and Services	Regional Centres	00KF	Southend-on-Sea UA
Cities and Services	Regional Centres	00ML	Brighton and Hove UA
Cities and Services	Regional Centres	00MR	Portsmouth UA
Cities and Services	Regional Centres	00MS	Southampton UA
Cities and Services	Regional Centres	18UC	Exeter CD
Cities and Services	Regional Centres	21UC	Eastbourne CD
Cities and Services	Regional Centres	21UD	Hastings CD
Cities and Services	Regional Centres	30UH	Lancaster CD
Cities and Services	Regional Centres	32UD	Lincoln CD
Cities and Services	Regional Centres	33UG	Norwich CD
Cities and Services	Regional Centres	45UH	Worthing CD
Cities and Services	Centres with Industry	00AB	Barking and Dagenham LB
Cities and Services	Centres with Industry	00BL	Bolton MCD
Cities and Services	Centres with Industry	00BN	Manchester MCD
Cities and Services	Centres with Industry	00BP	Oldham MCD
Cities and Services	Centres with Industry	00BQ	Rochdale MCD
Cities and Services	Centres with Industry	00CN	Birmingham MCD
Cities and Services	Centres with Industry	00CQ	Coventry MCD
Cities and Services	Centres with Industry	00CS	Sandwell MCD
Cities and Services	Centres with Industry	00CU	Walsall MCD
Cities and Services	Centres with Industry	00CW	Wolverhampton MCD
Cities and Services	Centres with Industry	00CX	Bradford MCD
Cities and Services	Centres with Industry	00CY	Calderdale MCD
Cities and Services	Centres with Industry	00CZ	Kirklees MCD
Cities and Services	Centres with Industry	00EX	Blackburn with Darwen UA
Cities and Services	Centres with Industry	00FK	Derby UA
Cities and Services	Centres with Industry	00FN	Leicester UA
Cities and Services	Centres with Industry	00FY	Nottingham UA
Cities and Services	Centres with Industry	30UD	Burnley CD
Cities and Services	Centres with Industry	30UG	Hyndburn CD
Cities and Services	Centres with Industry	30UJ	Pendle CD
Cities and Services	Centres with Industry	30UK	Preston CD
Cities and Services	Thriving London Periphery	00AF	Bromley LB
Cities and Services	Thriving London Periphery	00AS	Hillingdon LB
Cities and Services	Thriving London Periphery	00AX	Kingston upon Thames LB

Cities and Services	Thriving London Periphery	00BD	Richmond upon Thames LB
Cities and Services	Thriving London Periphery	00BF	Sutton LB
Cities and Services	Thriving London Periphery	00MC	Reading UA
Cities and Services	Thriving London Periphery	12UB	Cambridge CD
Cities and Services	Thriving London Periphery	26UK	Watford CD
Cities and Services	Thriving London Periphery	38UC	Oxford CD
London Suburbs	London Suburbs	00AC	Barnet LB
London Suburbs	London Suburbs	00AH	Croydon LB
London Suburbs	London Suburbs	00AJ	Ealing LB
London Suburbs	London Suburbs	00AK	Enfield LB
London Suburbs	London Suburbs	00AL	Greenwich LB
London Suburbs	London Suburbs	00AQ	Harrow LB
London Suburbs	London Suburbs	00AT	Hounslow LB
London Suburbs	London Suburbs	00BA	Merton LB
London Suburbs	London Suburbs	00BC	Redbridge LB
London Suburbs	London Suburbs	00BH	Waltham Forest LB
London Suburbs	London Suburbs	00KA	Luton UA
London Suburbs	London Suburbs	00MD	Slough UA
London Centre	London Centre	00AA	City of London LB
London Centre	London Centre	00AG	Camden LB
London Centre	London Centre	00AN	Hammersmith and Fulham LB
London Centre	London Centre	00AU	Islington LB
London Centre	London Centre	00AW	Kensington and Chelsea LB
London Centre	London Centre	00BG	Tower Hamlets LB
London Centre	London Centre	00BJ	Wandsworth LB
London Centre	London Centre	00BK	Westminster, City of LB
London Cosmopolitan	London Cosmopolitan	00AE	Brent LB
London Cosmopolitan	London Cosmopolitan	00AM	Hackney LB
London Cosmopolitan	London Cosmopolitan	00AP	Haringey LB
London Cosmopolitan	London Cosmopolitan	00AY	Lambeth LB
London Cosmopolitan	London Cosmopolitan	00AZ	Lewisham LB
London Cosmopolitan	London Cosmopolitan	00BB	Newham LB
London Cosmopolitan	London Cosmopolitan	00BE	Southwark LB
Prospering UK	Prospering Smaller Towns	00BM	Bury MCD
Prospering UK	Prospering Smaller Towns	00BS	Stockport MCD
Prospering UK	Prospering Smaller Towns	00BU	Trafford MCD
Prospering UK	Prospering Smaller Towns	00CT	Solihull MCD
Prospering UK	Prospering Smaller Towns	00EM	Northumberland UA
Prospering UK	Prospering Smaller Towns	00EQ	Cheshire East UA
Prospering UK	Prospering Smaller Towns	00EU	Warrington UA
Prospering UK	Prospering Smaller Towns	00EW	Cheshire West and Chester UA
Prospering UK	Prospering Smaller Towns	00FB	East Riding of Yorkshire UA
Prospering UK	Prospering Smaller Towns	00FF	York UA
Prospering UK	Prospering Smaller Towns	00FP	Rutland UA
Prospering UK	Prospering Smaller Towns	00GA	Herefordshire, County of UA
Prospering UK	Prospering Smaller Towns	00GG	Shropshire UA
Prospering UK	Prospering Smaller Towns	00HA	Bath and North East Somerset UA
Prospering UK	Prospering Smaller Towns	00HC	North Somerset UA
Prospering UK	Prospering Smaller Towns	00HD	South Gloucestershire UA
Prospering UK	Prospering Smaller Towns	00HP	Poole UA
Prospering UK	Prospering Smaller Towns	00HY	Wiltshire UA

Prospering UK	Prospering Smaller Towns	00KC	Central Bedfordshire UA
Prospering UK	Prospering Smaller Towns	12UC	East Cambridgeshire CD
Prospering UK	Prospering Smaller Towns	12UD	Fenland CD
Prospering UK	Prospering Smaller Towns	12UE	Huntingdonshire CD
Prospering UK	Prospering Smaller Towns	17UF	Derbyshire Dales CD
Prospering UK	Prospering Smaller Towns	17UH	High Peak CD
Prospering UK	Prospering Smaller Towns	17UK	South Derbyshire CD
Prospering UK	Prospering Smaller Towns	18UD	Mid Devon CD
Prospering UK	Prospering Smaller Towns	19UD	East Dorset CD
Prospering UK	Prospering Smaller Towns	19UE	North Dorset CD
Prospering UK	Prospering Smaller Towns	21UF	Lewes CD
Prospering UK	Prospering Smaller Towns	21UH	Wealden CD
Prospering UK	Prospering Smaller Towns	22UC	Braintree CD
Prospering UK	Prospering Smaller Towns	22UE	Castle Point CD
Prospering UK	Prospering Smaller Towns	22UG	Colchester CD
Prospering UK	Prospering Smaller Towns	22UK	Maldon CD
Prospering UK	Prospering Smaller Towns	23UB	Cheltenham CD
Prospering UK	Prospering Smaller Towns	23UC	Cotswold CD
Prospering UK	Prospering Smaller Towns	23UD	Forest of Dean CD
Prospering UK	Prospering Smaller Towns	23UF	Stroud CD
Prospering UK	Prospering Smaller Towns	23UG	Tewkesbury CD
Prospering UK	Prospering Smaller Towns	24UD	Eastleigh CD
Prospering UK	Prospering Smaller Towns	24UE	Fareham CD
Prospering UK	Prospering Smaller Towns	24UJ	New Forest CD
Prospering UK	Prospering Smaller Towns	26UL	Welwyn Hatfield CD
Prospering UK	Prospering Smaller Towns	29UB	Ashford CD
Prospering UK	Prospering Smaller Towns	29UC	Canterbury CD
Prospering UK	Prospering Smaller Towns	29UH	Maidstone CD
Prospering UK	Prospering Smaller Towns	30UE	Chorley CD
Prospering UK	Prospering Smaller Towns	30UL	Ribble Valley CD
Prospering UK	Prospering Smaller Towns	30UN	South Ribble CD
Prospering UK	Prospering Smaller Towns	30UP	West Lancashire CD
Prospering UK	Prospering Smaller Towns	31UB	Blaby CD
Prospering UK	Prospering Smaller Towns	31UC	Charnwood CD
Prospering UK	Prospering Smaller Towns	31UD	Harborough CD
Prospering UK	Prospering Smaller Towns	31UE	Hinckley and Bosworth CD
Prospering UK	Prospering Smaller Towns	31UG	Melton CD
Prospering UK	Prospering Smaller Towns	31UH	North West Leicestershire CD
Prospering UK	Prospering Smaller Towns	31UJ	Oadby and Wigston CD
Prospering UK	Prospering Smaller Towns	32UB	Boston CD
Prospering UK	Prospering Smaller Towns	32UE	North Kesteven CD
Prospering UK	Prospering Smaller Towns	32UF	South Holland CD
Prospering UK	Prospering Smaller Towns	32UG	South Kesteven CD
Prospering UK	Prospering Smaller Towns	32UH	West Lindsey CD
Prospering UK	Prospering Smaller Towns	33UB	Breckland CD
Prospering UK	Prospering Smaller Towns	33UC	Broadland CD
Prospering UK	Prospering Smaller Towns	33UE	Kings Lynn and West Norfolk CD
Prospering UK	Prospering Smaller Towns	33UH	South Norfolk CD
Prospering UK	Prospering Smaller Towns	34UC	Daventry CD
Prospering UK	Prospering Smaller Towns	34UD	East Northamptonshire CD
Prospering UK	Prospering Smaller Towns	34UE	Kettering CD

Prospering UK	Prospering Smaller Towns	34UG	South Northamptonshire CD
Prospering UK	Prospering Smaller Towns	36UC	Hambleton CD
Prospering UK	Prospering Smaller Towns	36UD	Harrogate CD
Prospering UK	Prospering Smaller Towns	36UE	Richmondshire CD
Prospering UK	Prospering Smaller Towns	36UH	Selby CD
Prospering UK	Prospering Smaller Towns	37UD	Broxtowe CD
Prospering UK	Prospering Smaller Towns	37UE	Gedling CD
Prospering UK	Prospering Smaller Towns	37UG	Newark and Sherwood CD
Prospering UK	Prospering Smaller Towns	37UJ	Rushcliffe CD
Prospering UK	Prospering Smaller Towns	38UB	Cherwell CD
Prospering UK	Prospering Smaller Towns	38UF	West Oxfordshire CD
Prospering UK	Prospering Smaller Towns	40UB	Mendip CD
Prospering UK	Prospering Smaller Towns	40UC	Sedgemoor CD
Prospering UK	Prospering Smaller Towns	40UD	South Somerset CD
Prospering UK	Prospering Smaller Towns	40UE	Taunton Deane CD
Prospering UK	Prospering Smaller Towns	41UD	Lichfield CD
Prospering UK	Prospering Smaller Towns	41UF	South Staffordshire CD
Prospering UK	Prospering Smaller Towns	41UG	Stafford CD
Prospering UK	Prospering Smaller Towns	41UH	Staffordshire Moorlands CD
Prospering UK	Prospering Smaller Towns	42UB	Babergh CD
Prospering UK	Prospering Smaller Towns	42UE	Mid Suffolk CD
Prospering UK	Prospering Smaller Towns	42UF	St Edmundsbury CD
Prospering UK	Prospering Smaller Towns	42UG	Suffolk Coastal CD
Prospering UK	Prospering Smaller Towns	44UB	North Warwickshire CD
Prospering UK	Prospering Smaller Towns	44UD	Rugby CD
Prospering UK	Prospering Smaller Towns	44UE	Stratford-on-Avon CD
Prospering UK	Prospering Smaller Towns	44UF	Warwick CD
Prospering UK	Prospering Smaller Towns	45UB	Adur CD
Prospering UK	Prospering Smaller Towns	47UB	Bromsgrove CD
Prospering UK	Prospering Smaller Towns	47UC	Malvern Hills CD
Prospering UK	Prospering Smaller Towns	47UF	Wychavon CD
Prospering UK	Prospering Smaller Towns	47UG	Wyre Forest CD
Prospering UK	New and Growing Towns	00AD	Bexley LB
Prospering UK	New and Growing Towns	00AR	Havering LB
Prospering UK	New and Growing Towns	00HX	Swindon UA
Prospering UK	New and Growing Towns	00JA	Peterborough UA
Prospering UK	New and Growing Towns	00KB	Bedford UA
Prospering UK	New and Growing Towns	00KG	Thurrock UA
Prospering UK	New and Growing Towns	00LC	Medway Towns UA
Prospering UK	New and Growing Towns	00MG	Milton Keynes UA
Prospering UK	New and Growing Towns	22UB	Basildon CD
Prospering UK	New and Growing Towns	22UJ	Harlow CD
Prospering UK	New and Growing Towns	23UE	Gloucester CD
Prospering UK	New and Growing Towns	24UF	Gosport CD
Prospering UK	New and Growing Towns	24UL	Rushmoor CD
Prospering UK	New and Growing Towns	26UB	Broxbourne CD
Prospering UK	New and Growing Towns	26UH	Stevenage CD
Prospering UK	New and Growing Towns	29UD	Dartford CD
Prospering UK	New and Growing Towns	29UG	Gravesham CD
Prospering UK	New and Growing Towns	34UF	Northampton CD
Prospering UK	New and Growing Towns	34UH	Wellingborough CD

Prospering UK	New and Growing Towns	42UC	Forest Heath CD
Prospering UK	New and Growing Towns	42UD	Ipswich CD
Prospering UK	New and Growing Towns	45UE	Crawley CD
Prospering UK	New and Growing Towns	47UE	Worcester CD
Prospering UK	Prospering Southern England	00MA	Bracknell Forest UA
Prospering UK	Prospering Southern England	00MB	West Berkshire UA
Prospering UK	Prospering Southern England	00ME	Windsor and Maidenhead UA
Prospering UK	Prospering Southern England	00MF	Wokingham UA
Prospering UK	Prospering Southern England	11UB	Aylesbury Vale CD
Prospering UK	Prospering Southern England	11UC	Chiltern CD
Prospering UK	Prospering Southern England	11UE	South Bucks CD
Prospering UK	Prospering Southern England	11UF	Wycombe CD
Prospering UK	Prospering Southern England	12UG	South Cambridgeshire CD
Prospering UK	Prospering Southern England	22UD	Brentwood CD
Prospering UK	Prospering Southern England	22UF	Chelmsford CD
Prospering UK	Prospering Southern England	22UH	Epping Forest CD
Prospering UK	Prospering Southern England	22UL	Rochford CD
Prospering UK	Prospering Southern England	22UQ	Uttlesford CD
Prospering UK	Prospering Southern England	24UB	Basingstoke and Deane CD
Prospering UK	Prospering Southern England	24UC	East Hampshire CD
Prospering UK	Prospering Southern England	24UG	Hart CD
Prospering UK	Prospering Southern England	24UN	Test Valley CD
Prospering UK	Prospering Southern England	24UP	Winchester CD
Prospering UK	Prospering Southern England	26UC	Dacorum CD
Prospering UK	Prospering Southern England	26UD	East Hertfordshire CD
Prospering UK	Prospering Southern England	26UE	Hertsmere CD
Prospering UK	Prospering Southern England	26UF	North Hertfordshire CD
Prospering UK	Prospering Southern England	26UG	St Albans CD
Prospering UK	Prospering Southern England	26UJ	Three Rivers CD
Prospering UK	Prospering Southern England	29UK	Sevenoaks CD
Prospering UK	Prospering Southern England	29UP	Tonbridge and Malling CD
Prospering UK	Prospering Southern England	29UQ	Tunbridge Wells CD
Prospering UK	Prospering Southern England	38UD	South Oxfordshire CD
Prospering UK	Prospering Southern England	38UE	Vale of White Horse CD
Prospering UK	Prospering Southern England	43UB	Elmbridge CD
Prospering UK	Prospering Southern England	43UC	Epsom and Ewell CD
Prospering UK	Prospering Southern England	43UD	Guildford CD
Prospering UK	Prospering Southern England	43UE	Mole Valley CD
Prospering UK	Prospering Southern England	43UF	Reigate and Banstead CD
Prospering UK	Prospering Southern England	43UG	Runnymede CD
Prospering UK	Prospering Southern England	43UH	Spelthorne CD
Prospering UK	Prospering Southern England	43UJ	Surrey Heath CD
Prospering UK	Prospering Southern England	43UK	Tandridge CD
Prospering UK	Prospering Southern England	43UL	Waverley CD
Prospering UK	Prospering Southern England	43UM	Woking CD
Prospering UK	Prospering Southern England	45UF	Horsham CD
Prospering UK	Prospering Southern England	45UG	Mid Sussex CD
Coastal and Countryside	Coastal and Countryside	00EY	Blackpool UA
Coastal and Countryside	Coastal and Countryside	00HE	Cornwall UA
Coastal and Countryside	Coastal and Countryside	00HF	Isles of Scilly UA
Coastal and Countryside	Coastal and Countryside	00HH	Torbay UA

Coastal and Countryside	Coastal and Countryside	00MW	Isle of Wight UA
Coastal and Countryside	Coastal and Countryside	16UB	Allerdale CD
Coastal and Countryside	Coastal and Countryside	16UD	Carlisle CD
Coastal and Countryside	Coastal and Countryside	16UF	Eden CD
Coastal and Countryside	Coastal and Countryside	16UG	South Lakeland CD
Coastal and Countryside	Coastal and Countryside	18UB	East Devon CD
Coastal and Countryside	Coastal and Countryside	18UE	North Devon CD
Coastal and Countryside	Coastal and Countryside	18UG	South Hams CD
Coastal and Countryside	Coastal and Countryside	18UH	Teignbridge CD
Coastal and Countryside	Coastal and Countryside	18UK	Torridge CD
Coastal and Countryside	Coastal and Countryside	18UL	West Devon CD
Coastal and Countryside	Coastal and Countryside	19UC	Christchurch CD
Coastal and Countryside	Coastal and Countryside	19UG	Purbeck CD
Coastal and Countryside	Coastal and Countryside	19UH	West Dorset CD
Coastal and Countryside	Coastal and Countryside	19UJ	Weymouth and Portland CD
Coastal and Countryside	Coastal and Countryside	21UG	Rother CD
Coastal and Countryside	Coastal and Countryside	22UN	Tendring CD
Coastal and Countryside	Coastal and Countryside	29UE	Dover CD
Coastal and Countryside	Coastal and Countryside	29UL	Shepway CD
Coastal and Countryside	Coastal and Countryside	29UN	Thanet CD
Coastal and Countryside	Coastal and Countryside	30UF	Fylde CD
Coastal and Countryside	Coastal and Countryside	30UQ	Wyre CD
Coastal and Countryside	Coastal and Countryside	32UC	East Lindsey CD
Coastal and Countryside	Coastal and Countryside	33UD	Great Yarmouth CD
Coastal and Countryside	Coastal and Countryside	33UF	North Norfolk CD
Coastal and Countryside	Coastal and Countryside	36UB	Craven CD
Coastal and Countryside	Coastal and Countryside	36UF	Ryedale CD
Coastal and Countryside	Coastal and Countryside	36UG	Scarborough CD
Coastal and Countryside	Coastal and Countryside	40UF	West Somerset CD
Coastal and Countryside	Coastal and Countryside	42UH	Waveney CD
Coastal and Countryside	Coastal and Countryside	45UC	Arun CD
Coastal and Countryside	Coastal and Countryside	45UD	Chichester CD
Mining and Manufacturing	Industrial Hinterlands	00BT	Tameside MCD
Mining and Manufacturing	Industrial Hinterlands	00BX	Knowsley MCD
Mining and Manufacturing	Industrial Hinterlands	00BZ	St Helens MCD
Mining and Manufacturing	Industrial Hinterlands	00CA	Sefton MCD
Mining and Manufacturing	Industrial Hinterlands	00CB	Wirral MCD
Mining and Manufacturing	Industrial Hinterlands	00CH	Gateshead MCD
Mining and Manufacturing	Industrial Hinterlands	00CK	North Tyneside MCD
Mining and Manufacturing	Industrial Hinterlands	00CL	South Tyneside MCD
Mining and Manufacturing	Industrial Hinterlands	00CM	Sunderland MCD
Mining and Manufacturing	Industrial Hinterlands	00EB	Hartlepool UA
Mining and Manufacturing	Industrial Hinterlands	00EC	Middlesbrough UA
Mining and Manufacturing	Industrial Hinterlands	00EE	Redcar and Cleveland UA
Mining and Manufacturing	Industrial Hinterlands	00EH	Darlington UA
Mining and Manufacturing	Industrial Hinterlands	00EJ	County Durham UA
Mining and Manufacturing	Industrial Hinterlands	00ET	Halton UA
Mining and Manufacturing	Industrial Hinterlands	00FA	Kingston upon Hull, City of UA
Mining and Manufacturing	Industrial Hinterlands	00GL	Stoke-on-Trent UA
Mining and Manufacturing	Industrial Hinterlands	16UC	Barrow-in-Furness CD
Mining and Manufacturing	Industrial Hinterlands	16UE	Copeland CD

Mining and Manufacturing	Manufacturing Towns	00BW	Wigan MCD
Mining and Manufacturing	Manufacturing Towns	00CC	Barnsley MCD
Mining and Manufacturing	Manufacturing Towns	00CE	Doncaster MCD
Mining and Manufacturing	Manufacturing Towns	00CF	Rotherham MCD
Mining and Manufacturing	Manufacturing Towns	00CR	Dudley MCD
Mining and Manufacturing	Manufacturing Towns	00DB	Wakefield MCD
Mining and Manufacturing	Manufacturing Towns	00EF	Stockton-on-Tees UA
Mining and Manufacturing	Manufacturing Towns	00FC	North East Lincolnshire UA
Mining and Manufacturing	Manufacturing Towns	00FD	North Lincolnshire UA
Mining and Manufacturing	Manufacturing Towns	00GF	Telford and Wrekin UA
Mining and Manufacturing	Manufacturing Towns	17UB	Amber Valley CD
Mining and Manufacturing	Manufacturing Towns	17UC	Bolsover CD
Mining and Manufacturing	Manufacturing Towns	17UD	Chesterfield CD
Mining and Manufacturing	Manufacturing Towns	17UG	Erewash CD
Mining and Manufacturing	Manufacturing Towns	17UJ	North East Derbyshire CD
Mining and Manufacturing	Manufacturing Towns	24UH	Havant CD
Mining and Manufacturing	Manufacturing Towns	29UM	Swale CD
Mining and Manufacturing	Manufacturing Towns	30UM	Rossendale CD
Mining and Manufacturing	Manufacturing Towns	34UB	Corby CD
Mining and Manufacturing	Manufacturing Towns	37UB	Ashfield CD
Mining and Manufacturing	Manufacturing Towns	37UC	Bassetlaw CD
Mining and Manufacturing	Manufacturing Towns	37UF	Mansfield CD
Mining and Manufacturing	Manufacturing Towns	41UB	Cannock Chase CD
Mining and Manufacturing	Manufacturing Towns	41UC	East Staffordshire CD
Mining and Manufacturing	Manufacturing Towns	41UE	Newcastle-under-Lyme CD
Mining and Manufacturing	Manufacturing Towns	41UK	Tamworth CD
Mining and Manufacturing	Manufacturing Towns	44UC	Nuneaton and Bedworth CD
Mining and Manufacturing	Manufacturing Towns	47UD	Redditch CD

Updated: December 2010

ANNEX 8A

**METHODS USED IN THE 2001 ONS AREA CLASSIFICATION
OF PRIMARY CARE ORGANISATIONS**

Contents

Introduction

This paper outlines the methodology used in the 2001 area classification for health areas. This includes the process undertaken to select a variable set, and the clustering techniques used to create the classification. The health areas used in the classification are primary care trusts from England and Wales, health board areas from Scotland, and health and social service boards from Northern Ireland.

Methods

Variable selection

The variables chosen for the health area classification were necessarily the same as the Local Authority classification, because we are assigning health areas to clusters based on the twenty-four subgroup centroids of the Local Authority classification.

Standardising data

All clustering techniques are based on the similarity or dissimilarity of the cases to be clustered. This is measured by constructing a distance matrix reflecting all the variables in the data set for each case. It is clear that problems will occur if there are differing scales or magnitudes among the variables. In general, variables with larger values and greater variation will have more impact on the final similarity measure. It is necessary to therefore make each variable equally represented in the distance measure by standardising the data.

The standardisation method used in the Local Authority classification was an inter-decile range standardisation, and this needs to be taken into account when we are producing the health area classification. Due to the method being used to create the health area classification, the denominator in the standardisation formula must be the same as that used in the Local Authority classification, so that the variables are on the same scale as the classification it is being assigned to. The standardisation method compares each health area's value, Xi, for each variable to the UK median for local authorities, XLA- med, and is then divided by the distance between the 90th percentile, XLA-90th, and the 10th percentile, XLA-10th. This method was also used in the 1991 area classification.

The formula is therefore:
$$\frac{X_i - X_{LA\text{-med}}}{X_{LA\text{-}90}^{th} - X_{LA\text{-}10}^{th}}$$

This method measures the deviation from the Local Authority median and this makes the health area data more consistent with the Local Authority classification.

Distance measure

Once each of the variables have been appropriately standardised, it is necessary to determine how "close" cases are to each other, or how far apart they are. Most methods of cluster analysis begin with a matrix reflecting a quantitative measure of similarity for each case. This is more commonly referred to as a similarity, distance, dissimilarity, or proximity matrix. Two cases are said to be "close" when their dissimilarity or distance is small or their similarity is large. There are many different measures that can be used to quantify proximity with the Euclidean distance and the squared Euclidean distance (SED) being two of the most common. We have used the SED as a measure of similarity.

Two health areas X and Y are said to be similar if the "distance" between them, based on census characteristics, is small. It uses the following formula:

$$\sum_{i-1}^{42} (Xi-Yi)^2$$ where X_i = value of variable i for health area **X** and Y_i = value of variable i for health area **Y**

so that the distance between the two health areas is the sum of the squared differences between their values for each and every variable.

Assignment to clusters

The health area classification was produced by assigning each health area to the "closest" one of the twenty-four Local Authority subgroups. This was defined as the subgroup whose centroid was the smallest squared Euclidean distance from the health authority. The higher levels of the classification were then created using the hierarchy from the Local Authority classification to allocate cluster members at the group and supergroup level. For example, if a health area belongs to subgroup "Regional Cities - A" then it will also belong to the group "Regional Cities" and the Supergroup "Cities and Services".

Contributors

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Updated: March 2005

THE ONS AREA CLASSIFICATION OF PRIMARY CARE ORGANISATIONS IN

ENGLAND: BASED ON 2001 CENSUS DATA

Supergroups	Groups	PRIMARY CARE ORGANISATIONS (boundaries as of September 2008)	
Cities and Services	Regional Centres	5D7	Newcastle PCT
Cities and Services	Regional Centres	5F1	Plymouth Teaching PCT
Cities and Services	Regional Centres	5F5	Salford PCT
Cities and Services	Regional Centres	5FE	Portsmouth City Teaching PCT
Cities and Services	Regional Centres	5L1	Southampton City PCT
Cities and Services	Regional Centres	5LQ	Brighton and Hove City PCT
Cities and Services	Regional Centres	5N1	Leeds PCT
Cities and Services	Regional Centres	5N4	Sheffield PCT
Cities and Services	Regional Centres	5NL	Liverpool PCT
Cities and Services	Regional Centres	5QJ	Bristol PCT
Cities and Services	Regional Centres	5QN	Bournemouth and Poole Teaching PCT
Cities and Services	Centres with Industry	5C2	Barking and Dagenham PCT
Cities and Services	Centres with Industry	5CC	Blackburn With Darwen PCT
Cities and Services	Centres with Industry	5EM	Nottingham City PCT
Cities and Services	Centres with Industry	5HQ	Bolton PCT
Cities and Services	Centres with Industry	5J5	Oldham PCT
Cities and Services	Centres with Industry	5J6	Calderdale PCT
Cities and Services	Centres with Industry	5M1	South Birmingham PCT
Cities and Services	Centres with Industry	5M3	Walsall Teaching PCT
Cities and Services	Centres with Industry	5MD	Coventry Teaching PCT
Cities and Services	Centres with Industry	5MV	Wolverhampton City PCT
Cities and Services	Centres with Industry	5N2	Kirklees PCT
Cities and Services	Centres with Industry	5N7	Derby City PCT
Cities and Services	Centres with Industry	5NH	East Lancashire Teaching PCT
Cities and Services	Centres with Industry	5NQ	Heywood, Middleton and Rochdale PCT
Cities and Services	Centres with Industry	5NT	Manchester PCT
Cities and Services	Centres with Industry	5NY	Bradford and Airedale Teaching PCT
Cities and Services	Centres with Industry	5PC	Leicester City PCT
Cities and Services	Centres with Industry	5PF	Sandwell PCT
Cities and Services	Centres with Industry	5PG	Birmingham East and North PCT
Cities and Services	Thriving London Periphery	5A5	Kingston PCT
Cities and Services	Thriving London Periphery	5A7	Bromley PCT
Cities and Services	Thriving London Periphery	5AT	Hillingdon PCT
Cities and Services	Thriving London Periphery	5M6	Richmond and Twickenham PCT
Cities and Services	Thriving London Periphery	5M7	Sutton and Merton PCT
Cities and Services	Thriving London Periphery	5QG	Berkshire East PCT
London Suburbs	London Suburbs	5A8	Greenwich Teaching PCT
London Suburbs	London Suburbs	5A9	Barnet PCT
London Suburbs	London Suburbs	5C1	Enfield PCT
London Suburbs	London Suburbs	5GC	Luton PCT
London Suburbs	London Suburbs	5HX	Ealing PCT
London Suburbs	London Suburbs	5HY	Hounslow PCT
London Suburbs	London Suburbs	5K6	Harrow PCT
London Suburbs	London Suburbs	5K9	Croydon PCT
London Suburbs	London Suburbs	5NA	Redbridge PCT
London Suburbs	London Suburbs	5NC	Waltham Forest PCT
London Centre	London Centre	5C4	Tower Hamlets PCT

London Centre	London Centre	5H1	Hammersmith and Fulham PCT
London Centre	London Centre	5K7	Camden PCT
London Centre	London Centre	5K8	Islington PCT
London Centre	London Centre	5LA	Kensington and Chelsea PCT
London Centre	London Centre	5LC	Westminster PCT
London Centre	London Centre	5LG	Wandsworth PCT
London Cosmopolitan	London Cosmopolitan	5C3	City and Hackney Teaching PCT
London Cosmopolitan	London Cosmopolitan	5C5	Newham PCT
London Cosmopolitan	London Cosmopolitan	5C9	Haringey Teaching PCT
London Cosmopolitan	London Cosmopolitan	5K5	Brent Teaching PCT
London Cosmopolitan	London Cosmopolitan	5LD	Lambeth PCT
London Cosmopolitan	London Cosmopolitan	5LE	Southwark PCT
London Cosmopolitan	London Cosmopolitan	5LF	Lewisham PCT
London Cosmopolitan	London Cosmopolitan	5MX	Heart Of Birmingham Teaching PCT
Prospering UK	Prospering Smaller Towns	5A3	South Gloucestershire PCT
Prospering UK	Prospering Smaller Towns	5CN	Herefordshire PCT
Prospering UK	Prospering Smaller Towns	5F7	Stockport PCT
Prospering UK	Prospering Smaller Towns	5FL	Bath and North East Somerset PCT
Prospering UK	Prospering Smaller Towns	5J2	Warrington PCT
Prospering UK	Prospering Smaller Towns	5JX	Bury PCT
Prospering UK	Prospering Smaller Towns	5M2	Shropshire County PCT
Prospering UK	Prospering Smaller Towns	5M8	North Somerset PCT
Prospering UK	Prospering Smaller Towns	5N9	Lincolnshire Teaching PCT
Prospering UK	Prospering Smaller Towns	5NG	Central Lancashire PCT
Prospering UK	Prospering Smaller Towns	5NN	Western Cheshire PCT
Prospering UK	Prospering Smaller Towns	5NP	Central and Eastern Cheshire PCT
Prospering UK	Prospering Smaller Towns	5NR	Trafford PCT
Prospering UK	Prospering Smaller Towns	5NV	North Yorkshire and York PCT
Prospering UK	Prospering Smaller Towns	5NW	East Riding Of Yorkshire PCT
Prospering UK	Prospering Smaller Towns	5P1	South East Essex PCT
Prospering UK	Prospering Smaller Towns	5P2	Bedfordshire PCT
Prospering UK	Prospering Smaller Towns	5P6	West Sussex PCT
Prospering UK	Prospering Smaller Towns	5P7	East Sussex Downs and Weald PCT
Prospering UK	Prospering Smaller Towns	5PA	Leicestershire County and Rutland PCT
Prospering UK	Prospering Smaller Towns	5PD	Northamptonshire Teaching PCT
Prospering UK	Prospering Smaller Towns	5PK	South Staffordshire PCT
Prospering UK	Prospering Smaller Towns	5PL	Worcestershire PCT
Prospering UK	Prospering Smaller Towns	5PM	Warwickshire PCT
Prospering UK	Prospering Smaller Towns	5PQ	Norfolk PCT
Prospering UK	Prospering Smaller Towns	5PT	Suffolk PCT
Prospering UK	Prospering Smaller Towns	5PW	North East Essex PCT
Prospering UK	Prospering Smaller Towns	5QA	Eastern and Coastal Kent PCT
Prospering UK	Prospering Smaller Towns	5QC	Hampshire PCT
Prospering UK	Prospering Smaller Towns	5QH	Gloucestershire PCT
Prospering UK	Prospering Smaller Towns	5QK	Wiltshire PCT
Prospering UK	Prospering Smaller Towns	5QL	Somerset PCT
Prospering UK	Prospering Smaller Towns	TAC	Northumberland Care Trust
Prospering UK	Prospering Smaller Towns	5QW	Solihull PCT
Prospering UK	New and Growing Towns	5A4	Havering PCT
Prospering UK	New and Growing Towns	5CQ	Milton Keynes PCT
Prospering UK	New and Growing Towns	5K3	Swindon PCT
Prospering UK	New and Growing Towns	5L3	Medway PCT
Prospering UK	New and Growing Towns	5P3	East and North Hertfordshire PCT
Prospering UK	New and Growing Towns	5PN	Peterborough PCT

Prospering UK	New and Growing Towns	5PV	West Essex PCT
Prospering UK	New and Growing Towns	5PY	South West Essex PCT
Prospering UK	New and Growing Towns	TAK	Bexley Care Trust
Prospering UK	Prospering Southern England	5P4	West Hertfordshire PCT
Prospering UK	Prospering Southern England	5P5	Surrey PCT
Prospering UK	Prospering Southern England	5P9	West Kent PCT
Prospering UK	Prospering Southern England	5PP	Cambridgeshire PCT
Prospering UK	Prospering Southern England	5PX	Mid Essex PCT
Prospering UK	Prospering Southern England	5QD	Buckinghamshire PCT
Prospering UK	Prospering Southern England	5QE	Oxfordshire PCT
Prospering UK	Prospering Southern England	5QF	Berkshire West PCT
Coastal and Countryside	Coastal and Countryside	5HP	Blackpool PCT
Coastal and Countryside	Coastal and Countryside	5NE	Cumbria Teaching PCT
Coastal and Countryside	Coastal and Countryside	5NF	North Lancashire Teaching PCT
Coastal and Countryside	Coastal and Countryside	5P8	Hastings and Rother PCT
Coastal and Countryside	Coastal and Countryside	5PR	Great Yarmouth and Waveney PCT
Coastal and Countryside	Coastal and Countryside	5QM	Dorset PCT
Coastal and Countryside	Coastal and Countryside	5QP	Cornwall and Isles Of Scilly PCT
Coastal and Countryside	Coastal and Countryside	5QQ	Devon PCT
Coastal and Countryside	Coastal and Countryside	5QT	Isle Of Wight NHS PCT
Coastal and Countryside	Coastal and Countryside	TAL	Torbay Care Trust
Mining and Manufacturing	Industrial Hinterlands	5D8	North Tyneside PCT
Mining and Manufacturing	Industrial Hinterlands	5D9	Hartlepool PCT
Mining and Manufacturing	Industrial Hinterlands	5J4	Knowsley PCT
Mining and Manufacturing	Industrial Hinterlands	5J9	Darlington PCT
Mining and Manufacturing	Industrial Hinterlands	5KF	Gateshead PCT
Mining and Manufacturing	Industrial Hinterlands	5KG	South Tyneside PCT
Mining and Manufacturing	Industrial Hinterlands	5KL	Sunderland Teaching PCT
Mining and Manufacturing	Industrial Hinterlands	5KM	Middlesbrough PCT
Mining and Manufacturing	Industrial Hinterlands	5LH	Tameside and Glossop PCT
Mining and Manufacturing	Industrial Hinterlands	5ND	County Durham PCT
Mining and Manufacturing	Industrial Hinterlands	5NJ	Sefton PCT
Mining and Manufacturing	Industrial Hinterlands	5NK	Wirral PCT
Mining and Manufacturing	Industrial Hinterlands	5NM	Halton and St Helens PCT
Mining and Manufacturing	Industrial Hinterlands	5NX	Hull Teaching PCT
Mining and Manufacturing	Industrial Hinterlands	5PJ	Stoke On Trent PCT
Mining and Manufacturing	Industrial Hinterlands	5QR	Redcar and Cleveland PCT
Mining and Manufacturing	Manufacturing Towns	5E1	Stockton-on-Tees Teaching PCT
Mining and Manufacturing	Manufacturing Towns	5EF	North Lincolnshire PCT
Mining and Manufacturing	Manufacturing Towns	5ET	Bassetlaw PCT
Mining and Manufacturing	Manufacturing Towns	5H8	Rotherham PCT
Mining and Manufacturing	Manufacturing Towns	5HG	Ashton, Leigh and Wigan PCT
Mining and Manufacturing	Manufacturing Towns	5JE	Barnsley PCT
Mining and Manufacturing	Manufacturing Towns	5MK	Telford and Wrekin PCT
Mining and Manufacturing	Manufacturing Towns	5N3	Wakefield District PCT
Mining and Manufacturing	Manufacturing Towns	5N5	Doncaster PCT
Mining and Manufacturing	Manufacturing Towns	5N6	Derbyshire County PCT
Mining and Manufacturing	Manufacturing Towns	5N8	Nottinghamshire County Teaching PCT
Mining and Manufacturing	Manufacturing Towns	5PE	Dudley PCT
Mining and Manufacturing	Manufacturing Towns	5PH	North Staffordshire PCT
Mining and Manufacturing	Manufacturing Towns	TAN	North East Lincolnshire Care Trust Plus

Updated: June 2011

ANNEX 9

HEALTH SURVEY FOR ENGLAND INDICATORS UPDATE

Contents

Introduction

This annex presents a summary of the project commissioned by The Information Centre for health and social care with the aim of providing updated estimates of key health and lifestyle indicators from the Health Survey for England (HSE). Its text, as well as the indicators' definitions in the User Guide and layout of the HSE data files, have been modified in accordance with the standard Compendium file structure and presentation style.

The HSE is a series of annual surveys designed to measure health and health related behaviours in adults and children living in private households in England. The survey consists of an interview and nurse visit. It has a series of core elements that are included every year and special topics that are included in selected years. Core topics include general health, smoking, drinking and fruit and vegetable consumption, height, weight, blood pressure measurements and blood and saliva samples. Special topics include cardiovascular disease, physical activity, accidents, lung function measurement and certain blood analytes.

New analysis of data covering three year periods and annual data was carried out for England and at sub-national levels that included Government Office Regions (GORs), ONS Classification areas, Strategic Health Authorities (SHAs), and Counties plus their comparisons to England figures.The analysis has been presented as three-year moving averages and as trend analysis based on annual figures and will be updated each year alongside the main survey publication. For most of the indicators, the figures have been calculated for the following three year periods: 2001-03, 2002-04, 2003-05 and 2004-06 and for single years from 1998 to 2006 except the indicators feor which 1999 and 2004 data were unavailable.

Aim

The aim was to investigate any geographic variations from the national rates and to investigate whether trends for any sub-national levels differed from the national trends. In particular, to investigate whether there was a consistent pattern over time and across health indicators.

Methods

The background information about methods for this analysis can be in the report "Health and lifestyle indicators for Strategic Health Authorities, 1994-2002" availanle at the following website address: http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsStatistics/PublicationsStatisticsArticle/fs/en?CONTENT_ID=4078028&chk=rlzSVD.

Methods for data collection can be found in the reports for each year of the survey. The estimates for earlier years replace the previously published and may be slightly different due to using a different version of the National Statistics Postcode Directory (NSPD) to locate HSE respondents to the classifications

Age-standardised tables are presented showing whether individual geographic areas are statistically significantly different from the national average for each health indicator for each 3 year period. These national comparisons are based on 95% and 99.8% confidence intervals of the rate and fall into five following bands:

B1 = Significantly lower than the national average at the 99.8% level;
B5 = Significantly lower than the national average at the 95% level but not at the 99.8% level;
W = National average lies within expected variation (95% confidence interval);
A5 = Significantly higher than the national average at the 95% level but not at the 99.8% level;
A1 = Significantly higher than the national average at the 99.8% level.

Contributors

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Contact details

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ANNEX 10

GP RELEVANT POPULATION ESTIMATES – TECHNICAL NOTES

Contents

Introduction

This notes explain how data on the GP relevant populations of Strategic Health Authorities (SHAs) and Primary Care Organisations (PCOs) are collected and processed. The data were collected in April 2010 and have been constrained to Office for National Statistics (ONS) 2009 mid-year estimates - based on the 2001 Census.

Definitions of Terminology

GP relevant population: Population registered with the constituent GP practices of a PCO and SHA; excluding special populations, adjusted to ensure consistency with ONS estimates.

Special Populations: Special population are made up of -
  (i) UK **armed forces** with a usual address within the geographical boundary of a PCO; and foreign (US and Ghurka) armed services including their dependants.
  (ii) Convicted **prisoners** who have served more than 6 months of a prison sentence.
  (iii) That part of the **asylum seeker population** that is included in the ONS 2008 mid-year estimates and presumed to be unregistered with GPs.

Data Collection and Processing

GP patient registration data for each GP practice were extracted from GP registers via Connecting for Health in April 2010. Registrations were extracted at post code level, denoting the place of residence. .

Where a postcode was missing or was unrecognised by the NHS National Postcode Directory, the registrations were re-assigned to the postcode geography of the rest of the GP list of which they form a part.

The data with postcode geography of residence was aggregated to Local Authority (LA) level and reconciled with ONS mid-year resident population estimates for 2009, minus special populations and aggregated for 38 age and sex intervals.

The special populations were subtracted from the ONS estimates as they will not normally be registered with GPs. The comparisons resulted in a set of 38 weighting factors for each LA, representing the differences between the ONS estimates and the number of GP patient registrations.

This reconciliation is carried out as the number of patient registrations is greater than the number of people living in England and Wales according to population estimates from the ONS. There may be a number of reasons for this, e.g. people leaving the country and not notifying their GP.

The reconciliation to ONS estimates was done at LA level because it provides a greater level of accuracy than PCO level reconciliation, as the registrations were reconciled to the age and sex breakdowns of 376 local authority districts, rather than 151 PCOs in England.

These weighting factors are then applied to all postcode–LA combinations to give a set of adjusted postcode level figures.

Finally, using a file of GP practice codes to PCO, the adjusted figures are aggregated up at PCO level, based on the practice code of registration, to form the final estimates of PCO level patient registrations.

Notes on the Spreadsheet

All figures have been corrected to the ONS estimates for the geographical populations of LAs.

As the figures collected from the PCOs are constrained to ONS estimates and then special populations removed - the figures bear no resemblance to actual people. Therefore no figures have been suppressed and the spreadsheet may contain figures of 1. However, this should not be taken to suggest that the figures are accurate to this level, as it is dependant on the combined accuracy of: the ONS mid-year estimates; FHS and GP practice registers; and the postcode to NHS organisation translations in the NHS Postcode Directory.

Contact Details

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Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
AA01_GENERIC POPULATION INDICATORS						
01A_Estimates of resident population						
Number	2009	MFP	All ages, <1, 5 year age bands up to 85+	E&W E GOR ONS SHA LA PCO CTY	01A_09_V1	01A_001NO_09_V1
Number	2008	MFP	All ages, <1, 5 year age bands up to 85+	E&W E GOR ONS SHA LA PCO CTY	01A_09_V1	01A_001NO_08_V3
Number	2007	MFP	All ages, <1, 5 year age bands up to 85+	E&W E GOR ONS SHA LA PCO CTY	01A_09_V1	01A_001NO_07_V4
Number	2006	MFP	All ages, <1, 5 year age bands up to 85+	E&W E GOR ONS SHA LA PCO CTY	01A_09_V1	01A_001NO_06_V5
Number	2005	MFP	All ages, <1, 5 year age bands up to 85+	E&W E GOR ONS SHA LA PCO CTY	01A_09_V1	01A_001NO_05_V7
Number	2004	MFP	All ages, <1, 5 year age bands up to 85+	E&W E GOR ONS SHA LA PCO CTY	01A_09_V1	01A_001NO_04_V8
Number	2003	MFP	All ages, <1, 5 year age bands up to 85+	E&W E GOR ONS SHA LA PCO CTY	01A_09_V1	01A_001NO_03_V7
Number	2002	MFP	All ages, <1, 5 year age bands up to 85+	E&W E GOR ONS SHA LA PCO CTY	01A_09_V1	01A_001NO_02_V7
Number	2001	MFP	All ages, <1, 5 year age bands up to 85+	E&W E GOR ONS SHA LA PCO CTY	01A_09_V1	01A_001NO_01_V4
Number	2000	MFP	All ages, <1, 5 year age bands up to 85+	E&W E GOR ONS SHA LA PCO CTY	01A_09_V1	01A_001NO_00_V4
Number	1999	MFP	All ages, <1, 5 year age bands up to 85+	E&W E GOR ONS SHA LA PCO CTY	01A_09_V1	01A_001NO_99_V4
Number	1998	MFP	All ages, <1, 5 year age bands up to 85+	E&W E GOR ONS SHA LA PCO CTY	01A_09_V1	01A_001NO_98_V4
Number	1997	MFP	All ages, <1, 5 year age bands up to 85+	E&W E GOR ONS SHA LA PCO CTY	01A_09_V1	01A_001NO_97_V4
Number	1996	MFP	All ages, <1, 5 year age bands up to 85+	E&W E GOR ONS SHA LA PCO CTY	01A_09_V1	01A_001NO_96_V4
Number	1995	MFP	All ages, <1, 5 year age bands up to 85+	E&W E GOR ONS SHA LA PCO CTY	01A_09_V1	01A_001NO_95_V4
Number	1994	MFP	All ages, <1, 5 year age bands up to 85+	E&W E GOR ONS SHA LA PCO CTY	01A_09_V1	01A_001NO_94_V4
Number	1993	MFP	All ages, <1, 5 year age bands up to 85+	E&W E GOR ONS SHA LA PCO CTY	01A_09_V1	01A_001NO_93_V4
01C_GP relevant population estimates						
Number	2009	MFP	All ages, 18 & over, <1, 1-4, 5-9, 10-14, 15-19, 5 year age bands up to 85+	E&W E GOR SHA PCO	01C_09_V1	01C_185NO_09_V1
01F_Indices of Deprivation 2010						
Score and rank	2010	P	N/A	LA	01F_10_V1	01F_183SC_10_V1
01G_ONS Area Classification						

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
Area classification	2001	P	N/A	LA PCO	01G_01_V4	01G_005SC_01_V4
01H_Composition of the census count of resident population						
Number and percent	2001	P	All ages	E&W E GOR ONS SHA LA PCO	01H_01_V2	01H_006VS_01_V2
01I_Census count of resident population by age and sex						
Number	2001	MFP	All ages, <5, 5-14, 15-24, 25-44, 45-64, 65-74, 75-84, 85+	E&W E GOR ONS SHA LA PCO	01I_01_V2	01I_007NO_01_V2
01J_Communal establishments and their populations						
Number and percent	2001	P	All ages	E&W E GOR ONS SHA LA PCO	01J_01_V2	01J_008VS_01_V2
01K_Economic position of residents						
Number and percent	2001	P	16-74	E&W E GOR ONS SHA LA PCO	01K_01_V2	01K_011VS_01_V2
01L_Ethnic group and country of birth						
Number and percent	2001	P	All ages	E&W E GOR ONS SHA LA PCO	01L_01_V2	01L_012VS_01_V2
01M_Residents in households						
Number and percent	2001	P	All ages	E&W E GOR ONS SHA LA PCO	01M_01_V2	01M_013VS_01_V2
01N_Dependent children in households						
Number and percent	2001	P	0-18	E&W E GOR ONS SHA LA PCO	01N_01_V2	01N_014VS_01_V2
01O_Pensioners in households						
Number and percent	2001	P	<75, 75+	E&W E GOR ONS SHA LA PCO	01O_01_V2	01O_015VS_01_V2
01P_Educational qualifications						
Number and percent	2001	P	16-74, 16-pensionable age	E&W E GOR ONS SHA LA PCO	01P_01_V2	01P_016VS_01_V2
01Q_Social class as defined by occupation of household reference person						
Number and percent	2001	P	16-64	E&W E GOR ONS SHA LA PCO	01Q_01_V2	01Q_017VS_01_V2
01R_National Statistics Socio-Economic Classification (NS-SEC) as defined by own occupation						
Number and percent	2001	MF	16-74, 16-64	E&W E GOR ONS SHA LA PCO	01R_01_V2	01R_018VS_01_V2
01S_Lone parent families with dependent children						
Number and percent	2001	P	<18	E&W E GOR ONS SHA LA PCO	01S_01_V3	01S_019VS_01_V3
01T_Standard of health in preceding 12 months						
Number and percent	2001	P	All ages	E&W E GOR ONS SHA LA PCO	01T_01_V2	01T_501VS_01_V2
01U_Provision of unpaid care						
Number and percent	2001	P	All ages	E&W E GOR ONS SHA LA PCO	01U_01_V2	01U_502VS_01_V2
01V_Health of providers of unpaid care						
Number and percent	2001	P	All ages	E&W E GOR ONS SHA LA PCO	01V_01_V2	01V_504VS_01_V2
01W_Religion						
Number and percent	2001	P	All ages	E&W E GOR ONS SHA LA PCO	01W_01_V2	01W_503VS_01_V2
BA02_RISK FACTORS						
02A_Fat consumption						
Percent	2007-09 FY 1996/97 -FY 1998/99 to 2006-08	P	All ages	E GOR	02A_09_V1	02A_051PCP1_09_V1
Percent	2009 FY 2001/02 to 2008	P	All ages	E GOR	02A_09_V1	02A_051PCP2_09_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
Percent	2007-09 FY 1996/97 -FY 1998/99 to 2006-08	P	All ages	E GOR	02A_09_V1	02A_051PCP3_09_V1
Percent	2008 FY 2001/02 to 2008	P	All ages	E GOR	02A_09_V1	02A_051PCP4_09_V1
02D_Body Mass Index						
Mean and age-standardised mean	2001-03 2002-04 2003-05 2004-06 2005-07 2006-08	MFP	16+	E GOR ONS SHA CTY	02D_08_V1	02D_310VSP1_08_V1
Mean and age-standardised mean	1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008	MFP	16+	E GOR ONS SHA CTY	02D_08_V1	02D_310VSP2_08_V1
02E_Adults who are overweight						
Number, percent and age-standardised percent	2001-03 2002-04 2003-05 2004-06 2005-07 2006-08	MFP	16+	E GOR ONS SHA CTY	02E_08_V1	02E_311VSP1_08_V1
Number, percent and age-standardised percent	1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008	MFP	16+	E GOR ONS SHA CTY	02E_08_V1	02E_311VSP2_08_V1
02F_Obesity						
Number, percent and age-standardised percent	2001-03 2002-04 2003-05 2004-06 2005-07 2006-08	MFP	16+	E GOR ONS SHA CTY	02F_08_V1	02F_312VSP1_08_V1
Number, percent and age-standardised percent	1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008	MFP	16+	E GOR ONS SHA CTY	02F_08_V1	02F_312VSP2_08_V1
02G_Cigarette smoking						
Percent	2009 (and 1998,	MFP	16+	E GOR	02G_09_V1	02G_314PC_09_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
	2000 to 2008)					
Number, percent and age-standardised percent	2001-03 2002-04 2003-05 2004-06 2005-07 2006-08	MFP	16+	E GOR ONS SHA CTY	02G_09_V1	02G_314VSP1_08_V1
Number, percent and age-standardised percent	1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008	MFP	16+	E GOR ONS SHA CTY	02G_09_V1	02G_314VSP2_08_V1
02I_Cotinine level						
Number, percent and age-standardised percent	2000-02	MFP	16+	E GOR ONS SHA CTY	02I_08_V1	02I_315VSP1_02_V2
Number, percent and age-standardised percent	2001, 2007, 2008	MFP	16+	E GOR ONS SHA CTY	02I_08_V1	02I_315VSP2_08_V1
02K_Alcohol consumption						
Percent	2009 (and 1998, 2000 to 2008)	MF	16+	E GOR	02K_09_V1	02K_318PC_09_V1
Number, percent and age-standardised percent	2001-03 2002-04 2003-05 2004-06	MFP	16+	E GOR ONS SHA CTY	02K_09_V1	02K_318VSP1_06_V1
Number, percent and age-standardised percent	2001-03 2002-04 2003-05 2004-06	MFP	16+	E GOR ONS SHA CTY	02K_09_V1	02K_318VSP2_06_V1
Number, percent and age-standardised percent	1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008	MFP	16+	E GOR ONS SHA CTY	02K_09_V1	02K_318VSP3_08_V1
Number, percent and age-standardised percent	1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008	MFP	16+	E GOR ONS SHA CTY	02K_09_V1	02K_318VSP4_08_V1
02L_Fruit and vegetable consumption						
Number, percent and age-standardised percent	2001-03 2002-04 2003-05 2004-06 2005-07 2006-08	MFP	16+	E GOR ONS SHA CTY	02L_08_V1	02L_319VSP1_08_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
Number, percent and age-standardised percent	2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008	MFP	16+	E GOR ONS SHA CTY	02L_08_V1	02L_319VSP2_08_V1
02M_Obesity among GP patients						
Number and percent of patients patients (adjusted for age)	FY2009/10	P	16+	E GOR SHA PCO	02M_10_V1	02M_670PC_10_V1
02N_Smoking among patients with selected conditions						
Number and percent of patients	FY2009/10	P	16+	E GOR SHA PCO	02N_10_V1	02N_671PC_10_V1
02O_Smoking cessation advice for smokers with selected conditions						
Number and percent of patients	FY2009/10	P	16+	E GOR SHA PCO	02O_10_V1	02O_672PC_10_V1
CA03_GENERAL HEALTH						
03A_Limiting long-term illness						
Number percent and age-standardised ratio	2001	MFP	<65, 65-74, 75+, all ages	E&W E GOR ONS SHA LA PCO	03A_01_V2	03A_009VS_01_V2
03B_Inability to work due to permanent sickness						
Number percent and age-standardised ratio	2001	MFP	Working ages, 16-74	E&W E GOR ONS SHA LA PCO CTY	03B_01_V2	03B_010VS_01_V2
03C_Mortality from all causes						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	03C_09_V1	03C_073NO_09_V1
Crude rate	2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	03C_09_V1	03C_073CRP1_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	03C_09_V1	03C_073CRP2_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	03C_09_V1	03C_073SM00++_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	03C_09_V1	03C_073SMT00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<15	E&W E GOR ONS SHA LA PCO CTY	03C_09_V1	03C_073SM0014_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	<15	E&W E GOR ONS SHA LA PCO CTY	03C_09_V1	03C_073SMT0014_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	15-64	E&W E GOR ONS SHA LA PCO CTY	03C_09_V1	03C_073SM1564_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	15-64	E&W E GOR ONS SHA LA PCO CTY	03C_09_V1	03C_073SMT1564_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	65-74	E&W E GOR ONS SHA LA PCO CTY	03C_09_V1	03C_073SM6574_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	65-74	E&W E GOR ONS SHA LA PCO CTY	03C_09_V1	03C_073SMT6574_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	03C_09_V1	03C_073SM0074_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	03C_09_V1	03C_073SMT0074_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	03C_09_V1	03C_073DR00++_09_V1
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	03C_09_V1	03C_073DRT00++_09_V1
Directly standardised rate	2007-09	MFP	<15	E&W E GOR ONS SHA LA PCO CTY	03C_09_V1	03C_073DR0014_09_V1
Directly standardised rate	1993-2009	MFP	<15	E&W E GOR ONS SHA LA PCO CTY	03C_09_V1	03C_073DRT0014_09_V1
Directly standardised rate	2007-09	MFP	15-64	E&W E GOR ONS SHA LA PCO CTY	03C_09_V1	03C_073DR1564_09_V1
Directly standardised rate	1993-2009	MFP	15-64	E&W E GOR ONS SHA LA PCO CTY	03C_09_V1	03C_073DRT1564_09_V1
Directly standardised rate	2007-09	MFP	65-74	E&W E GOR ONS SHA LA PCO CTY	03C_09_V1	03C_073DR6574_09_V1
Directly standardised rate	1993-2009	MFP	65-74	E&W E GOR ONS SHA LA PCO CTY	03C_09_V1	03C_073DRT6574_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	03C_09_V1	03C_073DR0074_09_V1
Directly standardised rate	1993-2009	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	03C_09_V1	03C_073DRT0074_09_V1
Directly standardised rate	1995-97 (DH	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	03C_09_V1	03C_073DR00++_97_V2

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
	PSA baseline)					
03D_Mortality from causes considered amenable to health care						
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	03D_09_V1	03D_074SMP1_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	03D_09_V1	03D_074SMP1T_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	03D_09_V1	03D_074SMP2_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	03D_09_V1	03D_074SMP2T_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	03D_09_V1	03D_074SMP3_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	03D_09_V1	03D_074SMP3T_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	03D_09_V1	03D_074DRP1_09_V1
Directly standardised rate	1993-2009	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	03D_09_V1	03D_074DRP1T_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	03D_09_V1	03D_074DRP2_09_V1
Directly standardised rate	1993-2009	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	03D_09_V1	03D_074DRP2T_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	03D_09_V1	03D_074DRP3_09_V1
Directly standardised rate	1993-2009	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	03D_09_V1	03D_074DRP3T_09_V1
03E_Life expectancy						
Number and ranks	1991-93 to 2007-09	MF	All ages	E&W E GOR SHA LA PCO CTY	03E_09_V1	03E_186NOP1_09_V1
Number and ranks	2000-02 to 2007-09	MF	65+	E&W E GOR SHA LA PCO CTY	03E_09_V1	03E_186NOP2_09_V1
03F_Self-assessed general health						
Number, percent and age-standardised percent	2001-03 2002-04 2003-05 2004-06 2005-07 2006-08	MFP	16+	E GOR ONS SHA CTY	03F_08_V1	03F_301VSP1_08_V1
Number, percent and age-standardised percent	1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007. 2008	MFP	16+	E GOR ONS SHA CTY	03F_08_V1	03F_301VSP2_08_V1
03G_Limiting longstanding illness						
Number, percent and age-standardised percent	2001-03 2002-04 2003-05 2004-06 2005-07 2006-08	MFP	16+	E GOR ONS SHA CTY	03G_08_V1	03G_302VSP1_08_V1
Number, percent and age-standardised percent	1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007. 2008	MFP	16+	E GOR ONS SHA CTY	03G_08_V1	03G_302VSP2_08_V1
03H_Acute sickness						

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
Number, percent and age-standardised percent	2001-03 2002-04 2003-05 2004-06 2005-07 2006-08	MFP	16+	E GOR ONS SHA CTY	03H_08_V1	03H_303VSP1_08_V1
Number, percent and age-standardised percent	1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007. 2008	MFP	16+	E GOR ONS SHA CTY	03H_08_V1	03H_303VSP2_08_V1
03I_Adults on prescribed medication						
Number, percent and age-standardised percent	2001-03 2005-07 2006-08	MFP	16+	E GOR ONS SHA CTY	03I_08_V1	03I_304VSP1_08_V1
Number, percent and age-standardised percent	1998, 2000, 2001, 2002, 2003, 2005, 2006, 2007, 2008	MFP	16+	E GOR ONS SHA CTY	03I_08_V1	03I_304VSP2_08_V1
03J_General Health Questionnaire GHQ12 score						
Number, percent and age-standardised percent	2001-03 2002-04 2003-05 2004-06	MFP	16+	E GOR ONS SHA CTY	03J_08_V1	03J_321VSP1_06_V1
Number, percent and age-standardised percent	1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006. 2008	MFP	16+	E GOR ONS SHA CTY	03J_08_V1	03J_321VSP2_08_V1
03K_Emergency hospital admissions: all conditions						
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	P	All ages	E GOR ONS SHA LA PCO CTY	03K_09_V1	03K_520ISR7GP_09_V1
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	F	All ages	E GOR ONS SHA LA PCO CTY	03K_09_V1	03K_520ISR7GF_09_V1
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	M	All ages	E GOR ONS SHA LA PCO CTY	03K_09_V1	03K_520ISR7GM_09_V1
03L_Emergency hospital admissions: acute conditions usually managed in primary care						
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	P	All ages	E GOR ONS SHA LA PCO CTY	03L_09_V1	03L_521ISR7EP_09_V1
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	F	All ages	E GOR ONS SHA LA PCO CTY	03L_09_V1	03L_521ISR7EF_09_V1
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	M	All ages	E GOR ONS SHA LA PCO CTY	03L_09_V1	03L_521ISR7EM_09_V1
03M_Emergency hospital admissions: chronic conditions usually managed in primary care						
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	P	All ages50	E GOR ONS SHA LA PCO CTY	03M_09_V1	03M_522ISR7FP_09_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	F	All ages	E GOR ONS SHA LA PCO CTY	03M_09_V1	03M_522ISR7FF_09_V1
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	M	All ages	E GOR ONS SHA LA PCO CTY	03M_09_V1	03M_522ISR7FM_09_V1
03N_Emergency readmissions to hospital within 28 days of discharge						
Indirectly age and sex standardised percent	FY1999/00 to FY2008/09	P	0-15	E GOR ONS SHA LA PCO CTY NHST	03N_09_V1	03N_523ISP4EP_09_V1
Indirectly age and sex standardised percent	FY1999/00 to FY2008/09	F	0-15	E GOR ONS SHA LA PCO CTY NHST	03N_09_V1	03N_523ISP4EF_09_V1
Indirectly age and sex standardised percent	FY1999/00 to FY2008/09	M	0-15	E GOR ONS SHA LA PCO CTY NHST	03N_09_V1	03N_523ISP4EM_09_V1
Indirectly age and sex standardised percent	FY1999/00 to FY2008/09	P	16-74	E GOR ONS SHA LA PCO CTY NHST	03N_09_V1	03N_523ISP4AP_09_V1
Indirectly age and sex standardised percent	FY1999/00 to FY2008/09	F	16-74	E GOR ONS SHA LA PCO CTY NHST	03N_09_V1	03N_523ISP4AF_09_V1
Indirectly age and sex standardised percent	FY1999/00 to FY2008/09	M	16-74	E GOR ONS SHA LA PCO CTY NHST	03N_09_V1	03N_523ISP4AM_09_V1
Indirectly age and sex standardised percent	FY1999/00 to FY2008/09	P	75+	E GOR ONS SHA LA PCO CTY NHST	03N_09_V1	03N_523ISP4DP_09_V1
Indirectly age and sex standardised percent	FY1999/00 to FY2008/09	F	75+	E GOR ONS SHA LA PCO CTY NHST	03N_09_V1	03N_523ISP4DF_09_V1
Indirectly age and sex standardised percent	FY1999/00 to FY2008/09	M	75+	E GOR ONS SHA LA PCO CTY NHST	03N_09_V1	03N_523ISP4DM_09_V1
Indirectly age and sex standardised percent	FY1999/00 to FY2008/09	F	16+	E GOR ONS SHA LA PCO CTY NHST	03N_09_V1	03N_523ISP4ADP_09_V1
Indirectly age and sex standardised percent	FY1999/00 to FY2008/09	M	16+	E GOR ONS SHA LA PCO CTY NHST	03N_09_V1	03N_523ISP4ADF_09_V1
Indirectly age and sex standardised percent	FY1999/00 to FY2008/09	P	16+	E GOR ONS SHA LA PCO CTY NHST	03N_09_V1	03N_523ISP4ADM_09_V1
03O_Years of life lost due to mortality from all causes						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	03O_09_V1	03O_070CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	03O_09_V1	03O_070DR_09_V1
03P_Deaths at home from all causes						
Indirectly age-standardised rates	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	03P_09_V1	03P_200ISR_09_V1
Percent	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	03P_09_V1	03P_200PC_09_V1
DA04_INFANT AND CHILD HEALTH						
04A_Vaccination for measles, mumps and rubella						
Percent	FY2009/10	P	<2	E GOR SHA PCO	04A_10_V1	04A_080PCP1_10_V1
Percent	FY2009/10	P	<5	E GOR SHA PCO	04A_10_V1	04A_080PCP2_10_V1
04B_Vaccination for whooping cough						
Percent	FY2009/10	P	<1	E GOR SHA PCO	04B_10_V1	04B_081PCP1_10_V1
Percent	FY2009/10	P	<5	E GOR SHA PCO	04B_10_V1	04B_081PCP2_10_V1
04C_Incidence of measles						
Number	2009	P	All ages	E&W E GOR ONS SHA LA PCO CTY	04C_09_V1	04C_086NO_09_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
Crude rate	2006-09	P	<1	E&W E GOR ONS SHA LA PCO CTY	04C_09_V1	04C_086CR_09_V1
Directly standardised rate	2006-09	P	<15	E&W E GOR ONS SHA LA PCO CTY	04C_09_V1	04C_086DR_09_V1
04D_Incidence of whooping cough						
Number	2009	P	All ages	E&W E GOR ONS SHA LA PCO CTY	04D_09_V1	04D_089NO_09_V1
Crude rate	2006-09	P	<1	E&W E GOR ONS SHA LA PCO CTY	04D_09_V1	04D_089CR_09_V1
Directly standardised rate	2006-09	P	<15	E&W E GOR ONS SHA LA PCO CTY	04D_09_V1	04D_089DR_09_V1
04E_Incidence of all central nervous system anomalies						
Crude rate	2008	P	0	E&W E GOR	04E_08_V1	04E_082CRP1_08_V1
Crude rate	2006-08	P	0	E&W E GOR	04E_08_V1	04E_082CRP2_08_V1
04F_Incidence of anencephalus						
Crude rate	2008	P	0	E&W	04F_08_V1	04F_083CRP1_08_V1
Crude rate	2006-08	P	0	E&W	04F_08_V1	04F_083CRP2_08_V1
04G_Incidence of spina bifida						
Crude rate	2008	P	0	E&W	04G_08_V1	04G_087CRP1_08_V1
Crude rate	2006-08	P	0	E&W	04G_08_V1	04G_087CRP2_08_V1
04H_Incidence of Down syndrome						
Crude rate	2008	P	0	E&W E GOR	04H_08_V1	04H_085CRP1_08_V1
Crude rate	2006-08	P	0	E&W E GOR	04H_08_V1	04H_085CRP2_08_V1
Crude rate	2006-08	P	0	E&W E GOR SHA	04H_08_V1	04H_085CRP3_08_V1
Number and percent	2006-08	P	0	E&W E GOR SHA	04H_08_V1	04H_085CRP4_08_V1
Number and percent	2006-08	P	0	E&W E GOR SHA	04H_08_V1	04H_085CRP5_08_V1
04I_Incidence of cleft palate and/or cleft lip						
Crude rate	2008	P	0	E&W E GOR	04I_08_V1	04I_084CRP1_08_V1
Crude rate	2006-08	P	0	E&W E GOR	04I_08_V1	04I_084CRP2_08_V1
04J_Low birthweight births						
Percent	2009	P	0	E&W E GOR ONS SHA LA PCO CTY	04J_09_V1	04J_090PC_09_V1
04K_Stillbirths						
Number	2009	F	11-15, 16-19, 20-24, 25-34, 35-39, 40+	E&W E GOR ONS SHA LA PCO CTY	04K_09_V1	04K_097NO_09_V1
Crude rate	2009	P	0	E&W E GOR ONS SHA LA PCO CTY	04K_09_V1	04K_097CRP1_09_V1
Crude rate	2007-09	P	0	E&W E GOR ONS SHA LA PCO CTY	04K_09_V1	04K_097CRP2_09_V1
04L_Perinatal mortality						
Crude rate	2009	P	Stillbirths and <7 days	E&W E GOR ONS SHA LA PCO CTY	04L_09_V2	04L_179CRP1_09_V1
Crude rate	2007-09	P	Stillbirths and <7 days	E&W E GOR ONS SHA LA PCO CTY	04L_09_V2	04L_179CRP2_09_V1
Crude rate	2004	P	Stillbirths and <7 days	E&W E GOR ONS SHA LA PCO CTY	04L_09_V2	04L_179CRP1_04_V3
Crude rate	2003-05	P	Stillbirths and <7 days	E&W E GOR ONS SHA LA PCO CTY	04L_09_V2	04L_179CRP2_05_V5
Crude rate	2004-06	P	Stillbirths and <7 days	E&W E GOR ONS SHA LA PCO CTY	04L_09_V2	04L_179CRP2_06_V2
04M_Postneonatal mortality						
Crude rate	2009	P	28 days-1 year	E&W E GOR ONS SHA LA PCO CTY	04M_09_V1	04M_180CRP1_09_V1
Crude rate	2007-09	P	28 days-1 year	E&W E GOR ONS SHA LA PCO CTY	04M_09_V1	04M_180CRP2_09_V1
04N_Mortality in infancy						
Crude rate	2009	P	<1 year, <28 days, <7 days	E&W E GOR ONS SHA LA PCO CTY	04N_09_V1	04N_181CRP1_09_V1
Crude rate	2007-09	P	<1 year, <28 days, <7days	E&W E GOR ONS SHA LA PCO CTY	04N_09_V1	04N_181CRP2_09_V1
04O_Hospital procedures: orchidopexy						

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
Indirectly age and sex standardised rate	FY2002/03 to FY2008/09	M	<5	E GOR ONS SHA LA PCO	04O_09_V1	04O_095ISR7NP1_09_V1
Indirectly age and sex standardised rate	FY2002/03 to FY2008/09	M	5-14	E GOR ONS SHA LA PCO	04O_09_V1	04O_095ISR7NP2_09_V1
Indirectly age and sex standardised percent	FY2002/03 to FY2008/09	M	0-14	E GOR ONS SHA LA PCO	04O_09_V1	04O_095ISP7N_09_V1

04Q_Emergency hospital admissions: children with lower respiratory tract infections

Indirectly age and sex standardised rate	FY2002/03 to FY2008/09	P	<16	E GOR ONS SHA LA PCO CTY	04Q_09_V1	04Q_524ISR7AP_09_V1
Indirectly age and sex standardised rate	FY2002/03 to FY2008/09	F	<16	E GOR ONS SHA LA PCO CTY	04Q_09_V1	04Q_524ISR7AF_09_V1
Indirectly age and sex standardised rate	FY2002/03 to FY2008/09	M	<16	E GOR ONS SHA LA PCO CTY	04Q_09_V1	04Q_524ISR7AM_09_V1

04R_Emergency hospital admissions: children with gastroenteritis

Indirectly age and sex standardised rate	FY2002/03 to FY2008/09	P	<5	E GOR ONS SHA LA PCO CTY	04R_09_V1	04R_525ISR7BP_09_V1
Indirectly age and sex standardised rate	FY2002/03 to FY2008/09	F	<5	E GOR ONS SHA LA PCO CTY	04R_09_V1	04R_525ISR7BF_09_V1
Indirectly age and sex standardised rate	FY2002/03 to FY2008/09	M	<5	E GOR ONS SHA LA PCO CTY	04R_09_V1	04R_525ISR7BM_09_V1

04S_Emergency hospital admissions: children with asthma

Indirectly age and sex standardised rate	FY2002/03 to FY2008/09	P	<16	E GOR ONS SHA LA PCO CTY	04S_09_V1	04S_536ISR7HP_09_V1
Indirectly age and sex standardised rate	FY2002/03 to FY2008/09	F	<16	E GOR ONS SHA LA PCO CTY	04S_09_V1	04S_536ISR7HF_09_V1
Indirectly age and sex standardised rate	FY2002/03 to FY2008/09	M	<16	E GOR ONS SHA LA PCO CTY	04S_09_V1	04S_536ISR7HM_09_V1

DB40_ORAL HEALTH IN CHILDREN

40A_Oral health in children: decayed teeth

Mean	AY2007/08	P	5	E GOR SHA LA PCO	40A_09_V1	40A_115MNP1_08_V2
Mean	AY2008/09	P	12	E GOR SHA LA PCO	40A_09_V1	40A_115MNP2_09_V1

40B_Oral health in children: missing teeth

Mean	AY2007/08	P	5	E GOR SHA LA PCO	40A_09_V1	40B_116MNP1_08_V2
Mean	AY2008/09	P	12	E GOR SHA LA PCO	40A_09_V1	40B_116MNP2_09_V1

40C_Oral health in children: filled teeth

Mean	AY2007/08	P	5	E GOR SHA LA PCO	40A_09_V1	40C_117MNP1_08_V2
Mean	AY2008/09	P	12	E GOR SHA LA PCO	40A_09_V1	40C_117MNP2_09_V1

40D_Oral health in children: decayed/missing/filled teeth

Mean	AY2007/08	P	5	E GOR SHA LA PCO	40A_09_V1	40D_118MNP1_08_V2
Mean	AY2008/09	P	12	E GOR SHA LA PCO	40A_09_V1	40D_118MNP2_09_V1

40E_Oral health in children: experience of dental decay

Percent	AY2007/08	P	5	E GOR SHA LA PCO	40A_09_V1	40E_119PCP1_08_V2
Percent	AY2008/09	P	12	E GOR SHA LA PCO	40A_09_V1	40E_119PCP2_09_V1

40F_Oral health in children: percentage with decayed teeth

Percent	AY2007/08	P	5	E GOR SHA LA PCO	40A_09_V1	40F_120PCP1_08_V2

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
Percent	AY2008/09	P	12	E GOR SHA LA PCO	40A_09_V1	40F_120PCP2_09_V1
40G_Oral health in children: decayed teeth in children with active dental decay						
Mean	AY2007/08	P	5	E GOR SHA LA PCO	40A_09_V1	40G_121MNP1_08_V2
Mean	AY2008/09	P	12	E GOR SHA LA PCO	40A_09_V1	40G_121MNP2_09_V1
40H_Oral health in children: decayed/missing/filled teeth in children with dental decay						
Mean	AY2007/08	P	5	E GOR SHA LA PCO	40A_09_V1	40H_122MNP1_08_V2
Mean	AY2008/09	P	12	E GOR SHA LA PCO	40A_09_V1	40H_122MNP2_09_V1
40I_Oral health in children: the Care index						
Percent	AY2007/08	P	5	E GOR SHA LA PCO	40A_09_V1	40I_123PCP1_08_V2
Percent	AY2008/09	P	12	E GOR SHA LA PCO	40A_09_V1	40I_123PCP2_09_V1
EA05_PREGNANCY						
05A_Fertility						
Number	2009	F	11+, 11-15, 16-19, 20-24, 25-34, 35-39, 40+	E&W E GOR ONS SHA LA PCO CTY	05A_09_V1	05A_079NO_09_V1
Crude rate	2009	F	11-49	E&W E GOR ONS SHA LA PCO CTY	05A_09_V1	05A_079CR_09_V1
Total period fertility rate	2009	F	11-49	E&W E GOR ONS SHA LA PCO CTY	05A_09_V1	05A_079DR_09_V1
05B_Live births in NHS hospitals						
Percent	2009	F	11+	E&W E GOR ONS SHA LA PCO	05B_09_V1	05B_143PC_09_V1
05C_Conceptions						
Crude rate	2006-08	F	<16	E&W E GOR SHA LA CTY	05C_08_V1	05C_138CRP1_08_V1
Crude rate	2006-08	F	<18	E&W E GOR ONS SHA LA PCO CTY	05C_08_V1	05C_138CRP2_08_V1
05D_Abortions						
Crude rate	2009	F	All ages, <18, 18-19, <20, 20-24, 25-29, 30-34, 35+	E&W E GOR SHA PCO	05D_09_V1	05D_139CRP1_09_V1
Crude rate	2006-08	F	<16	E&W E GOR SHA PCO	05D_09_V1	05D_139CRP2_08_V2
Total period abortion rate	2009	F	11-49	E&W E GOR SHA PCO	05D_09_V1	05D_139DR_09_V1
05E_Abortions by gestational age						
Percent	2009	F	All maternal ages	E&W E GOR SHA PCO	05E_09_V1	05E_140PC_09_V1
05F_Abortions performed in the NHS and privately						
Percent	2009	F	All maternal ages	E&W E GOR SHA PCO	05F_09_V1	05F_141PC_09_V1
05H_Total period abortion rate as percent of the potential fertility rate						
Percent	2009	F	11-49	E&W E GOR SHA PCO	05H_09_V1	05H_142PC_09_V1
05I_Maternal mortality						
Indirectly standardised ratio (SMR)	2007-09	F	15-44	E&W E GOR ONS SHA LA PCO CTY	05I_09_V1	05I_144SM1544_09_V1
Indirectly standardised ratio (SMR)	2007-09	F	<20	E&W E GOR ONS SHA LA PCO CTY	05I_09_V1	05I_144SM1519_09_V1
Directly standardised rate	2007-09	F	15-44	E&W E GOR ONS SHA LA PCO CTY	05I_09_V1	05I_144DR1544_09_V1
Directly standardised rate	2007-09	F	<20	E&W E GOR ONS SHA LA PCO CTY	05I_09_V1	05I_144DR1519_09_V1
FA22_ACCIDENTS						
22A_Hospital episodes (admissions): Accidents						
Directly standardised rate	FY1998/99 to FY2008/09	MFP	All ages	E GOR ONS SHA LA PCO CTY	22A_08_V1	22A_182DRP1_09_V1
Directly standardised rate	FY1998/99 to	MFP	<5	E GOR ONS SHA LA PCO CTY	22A_08_V1	22A_182DRP2_09_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
	FY2008/09					
Directly standardised rate	FY1998/99 to FY2008/09	MFP	5-14	E GOR ONS SHA LA PCO CTY	22A_08_V1	22A_182DRP3_09_V1
Directly standardised rate	FY1998/99 to FY2008/09	MFP	15-64	E GOR ONS SHA LA PCO CTY	22A_08_V1	22A_182DRP4_09_V1
Directly standardised rate	FY1998/99 to FY2008/09	MFP	65+	E GOR ONS SHA LA PCO CTY	22A_08_V1	22A_182DRP5_09_V1
Directly standardised rate	FY1998/99 to FY2008/09	MFP	75+	E GOR ONS SHA LA PCO CTY	22A_08_V1	22A_182DRP6_09_V1
Directly standardised rate	FY1998/99 to FY2008/09	MFP	85+	E GOR ONS SHA LA PCO CTY	22A_08_V1	22A_182DRP7_09_V1
22B_Mortality from accidents						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<5	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022SM0004_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<15	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022SM0014_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022SM0074_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	5-14	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022SM0514_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	15-24	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022SM1524_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	15-64	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022SM1564_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	65-84	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022SM6584_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	65+	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022SM65++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	75+	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022SM75++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	85+	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022SM85++_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022SMT00++_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	<15	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022SMT0014_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022SMT0074_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	15-24	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022SMT1524_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	65-84	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022SMT6584_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	65+	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022SMT65++_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022DR00++_09_V1
Directly standardised rate	2007-09	MFP	<5	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022DR0004_09_V1
Directly standardised rate	2007-09	MFP	<15	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022DR0014_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022DR0074_09_V1
Directly standardised rate	2007-09	MFP	5-14	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022DR0514_09_V1
Directly standardised rate	2007-09	MFP	15-24	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022DR1524_09_V1
Directly standardised rate	2007-09	MFP	15-64	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022DR1564_09_V1
Directly standardised rate	2007-09	MFP	65-84	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022DR6584_09_V1
Directly standardised rate	2007-09	MFP	65+	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022DR65++_09_V1
Directly standardised rate	2007-09	MFP	75+	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022DR75++_09_V1
Directly standardised rate	2007-09	MFP	85+	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022DR85++_09_V1
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022DRT00++_09_V1
Directly standardised rate	1993-2009	MFP	<15	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022DRT0014_09_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
Directly standardised rate	1993-2009	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022DRT0074_09_V1
Directly standardised rate	1993-2009	MFP	15-24	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022DRT1524_09_V1
Directly standardised rate	1993-2009	MFP	65-84	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022DRT6584_09_V1
Directly standardised rate	1993-2009	MFP	65+	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022DRT65++_09_V1
Directly standardised rate	1995-97 (OHN baseline)	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	22B_09_V1	22B_022DR00++_97_V5
22C_Mortality from accidental falls						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	22C_09_V1	22C_023NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	22C_09_V1	22C_023CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	22C_09_V1	22C_023SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	22C_09_V1	22C_023SM0074_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	22C_09_V1	22C_023SMT00++_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	22C_09_V1	22C_023DR00++_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	22C_09_V1	22C_023DR0074_09_V1
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	22C_09_V1	22C_023DRT00++_09_V1
22D_Mortality from skull fracture and intracranial injury						
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	22D_09_V1	22D_026M00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	22D_09_V1	22D_026SM0074_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	1+	E&W E GOR ONS SHA LA PCO CTY	22D_09_V1	22D_026SM01++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	1-14	E&W E GOR ONS SHA LA PCO CTY	22D_09_V1	22D_026M0114_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	15-24	E&W E GOR ONS SHA LA PCO CTY	22D_09_V1	22D_026SM1524_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	22D_09_V1	22D_026DR00++_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	22D_09_V1	22D_026DR0074_09_V1
Directly standardised rate	2007-09	MFP	1+	E&W E GOR ONS SHA LA PCO CTY	22D_09_V1	22D_026DR01++_09_V1
Directly standardised rate	2007-09	MFP	1-14	E&W E GOR ONS SHA LA PCO CTY	22D_09_V1	22D_026DR0114_09_V1
Directly standardised rate	2007-09	MFP	15-24	E&W E GOR ONS SHA LA PCO CTY	22D_09_V1	22D_026DR1524_09_V1
22E_Mortality from land transport accidents						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	22E_09_V1	22E_175NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	22E_09_V1	22E_175CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	22E_09_V1	22E_175SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	22E_09_V1	22E_175SM0074_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	22E_09_V1	22E_175SMT00++_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	22E_09_V1	22E_175DR00++_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	22E_09_V1	22E_175DR0074_09_V1
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	22E_09_V1	22E_175DRT00++_09_V1
22F_Major accidents						
Mean and age-standardised mean	1999-01	MFP	16+	E GOR ONS SHA CTY	22F_01_V2	22F_322VSP1_01_V2
2H_Years of life lost due to mortality from accidents						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	22H_09_V1	22H_071CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	22H_09_V1	22H_071DR_09_V1
22I_Years of life lost due to mortality from accidental falls						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	22I_09_V1	22I_021CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	22I_09_V1	22I_021DR_09_V1
22J_Years of life lost due to mortality from land transport accidents						

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	22J_09_V1	22J_024CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	22J_09_V1	22J_024DR_09_V1

GA23_ASTHMA

23A_Mortality from asthma

Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	23A_09_V1	23A_028NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	23A_09_V1	23A_028CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	23A_09_V1	23A_028SM00++_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	23A_09_V1	23A_028SMT00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	5-44	E&W E GOR ONS SHA LA PCO CTY	23A_09_V1	23A_028SM0544_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	23A_09_V1	23A_028DR00++_09_V1
Directly standardised rate	2007-09	MFP	5-44	E&W E GOR ONS SHA LA PCO CTY	23A_09_V1	23A_028DR0544_09_V1
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	23A_09_V1	23A_028DRT00++_09_V1

23B_Wheeze or diagnosed asthma

Standardised percent	2001	MFP	16+	E GOR ONS SHA CTY	23B_01_V1	23B_320VSP2_01_V1

23C_Prevalence: asthma and prescribed medication

Number and percent of pateints	FY2009/10	P	All ages	E GOR SHA PCO	23C_10_V1	23C_649PC_10_V1

23D_Prevalence: asthma with measures of variability or reversibility

Number and percent of patients	FY2009/10	P	8+	E GOR SHA PCO	23D_10_V1	23D_673PC_10_V1

23F_Asthma review among patients with asthma

Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	23F_10_V1	23F_652PC_10_V1

23H_Years of life lost due to mortality from asthma

Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	23H_09_V1	23H_027CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	23H_09_V1	23H_027DR_09_V1

HA24_BRONCHITIS AND EMPHYSEMA

24A_Mortality from bronchitis and emphysema

Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	24A_09_V1	24A_037NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CYT	24A_09_V1	24A_037CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	24A_09_V1	24A_037SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	24A_09_V1	24A_037SM0074_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	24A_09_V1	24A_037SMT00++_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	24A_09_V1	24A_037DR00++_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	24A_09_V1	24A_037DR0074_09_V1
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	24A_09_V1	24A_037DRT00++_09_V1

24B_Mortality from bronchitis, emphysema and other chronic obstructive pulmonary disease

Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	24B_09_V1	24B_038NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	24B_09_V1	24B_038CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	24B_09_V1	24B_038SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	24B_09_V1	24B_038SM0074_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	24B_09_V1	24B_038SMT00++_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	24B_09_V1	24B_038DR00++_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	24B_09_V1	24B_038DR0074_09_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	24B_09_V1	24B_038DRT00++_09_V1
24C_Prevalence: chronic obstructive pulmonary disease						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	24C_10_V1	24C_634PC_10_V1
24D_Prevalence: chronic obstructive pulmonary disease confirmed by spirometry						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	24D_10_V1	24D_635PC_10_V1
24F_FeV$_1$ checks for patients with chronic obstructive pulmonary disease						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	24F_10_V1	24F_637PC_10_V1
24G_COPD review among patients with chronic obstructive pulmonary disease						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	24G_10_V1	24G_638PC_10_V1
24H_Vaccination: influencza, for patients with chronic obstructive pulmonary disease						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	24H_10_V1	24H_639PC_10_V1
24I_Years of life lost due to mortality from bronchitis and emphysema						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	24I_09_V1	24I_031CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	24I_09_V1	24I_031DR_09_V1
24J_Years of life lost due to mortality from bronchitis, emphysema and other chronic obstructive pulmonary disease						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	24J_09_V1	24J_032CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	24J_09_V1	24J_032DR_09_V1
IA11_ALL CANCERS						
11A_Incidence of all cancers						
Directly age-standardised registration rate	2006-08	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	11A_08_V1	11A_077DR00++_08_V1
Directly age-standardised registration rate	2006-08	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	11A_08_V1	11A_077DR0074_08_V1
Directly age-standardised registration rate	1993-2008	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	11A_08_V1	11A_077DRT00++_08_V1
Indirectly standardised registration ratio (SRR)	2006-08	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	11A_08_V1	11A_077SR00++_08_V1
Indirectly standardised registration ratio (SRR)	2006-08	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	11A_08_V1	11A_077SR0074_08_V1
Indirectly standardised registration ratio (SRR)	1993-2008	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	11A_08_V1	11A_077SRT00++_08_V1
11B_Mortality from all cancers						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	11B_09_V1	11B_075NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	11B_09_V1	11B_075CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	11B_09_V1	11B_075SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<65	E&W E GOR ONS SHA LA PCO CTY	11B_09_V1	11B_075SM0064_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	11B_09_V1	11B_075SM0074_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	65-74	E&W E GOR ONS SHA LA PCO CTY	11B_09_V1	11B_075SM6574_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	11B_09_V1	11B_075SMT00++_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	<65	E&W E GOR ONS SHA LA PCO CTY	11B_09_V1	11B_075SMT0064_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	11B_09_V1	11B_075SMT0074_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	65-74	E&W E GOR ONS SHA LA PCO CTY	11B_09_V1	11B_075SMT6574_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	11B_09_V1	11B_075DR00++_09_V1
Directly standardised rate	2007-09	MFP	<65	E&W E GOR ONS SHA LA PCO CTY	11B_09_V1	11B_075DR0064_09_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	11B_09_V1	11B_075DR0074_09_V1
Directly standardised rate	2007-09	MFP	65-74	E&W E GOR ONS SHA LA PCO CTY	11B_09_V1	11B_075DR6574_09_V1
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	11B_09_V1	11B_075DRT00++_09_V1
Directly standardised rate	1993-2009	MFP	<65	E&W E GOR ONS SHA LA PCO CTY	11B_09_V1	11B_075DRT0064_09_V1
Directly standardised rate	1993-2009	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	11B_09_V1	11B_075DRT0074_09_V1
Directly standardised rate	1993-2009	MFP	65-74	E&W E GOR ONS SHA LA PCO CTY	11B_09_V1	11B_075DRT6574_09_V1
Directly standardised rate	1995-97 (OHN baseline)	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	11B_09_V1	11B_075DRP0074_97_V5
11C_Deaths at home from all cancers						
Indirectly age-standardised rates	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	11C_09_V1	11C_191ISR_09_V1
Percent	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	11C_09_V1	11C_191PC_09_V1
11D_Years of life lost due to mortality from all cancers						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	11D_09_V1	11D_072CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	11D_09_V1	11D_072DR_09_V1
11E_Prevalence: all cancers						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	11E_10_V1	11E_676PC_10_V1
IB19_BLADDER CANCER						
19A_Incidence of bladder cancer						
Directly age-standardised registration rate	2006-08	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	19A_08_V1	19A_029DR00++_08_V1
Directly age-standardised registration rate	2006-08	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	19A_08_V1	19A_029DR0074_08_V1
Directly age-standardised registration rate	1993-2008	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	19A_08_V1	19A_029DRT00++_08_V1
Indirectly standardised registration ratio (SRR)	2006-08	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	19A_08_V1	19A_029SR00++_08_V1
Indirectly standardised registration ratio (SRR)	2006-08	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	19A_08_V1	19A_029SR0074_08_V1
Indirectly standardised registration ratio (SRR)	1993-2008	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	19A_08_V1	19A_029SRT00++_08_V1
19B_Mortality from bladder cancer						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	19B_09_V1	19B_030NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	19B_09_V1	19B_030CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	19B_09_V1	19B_030SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	19B_09_V1	19B_030SM0074_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	19B_09_V1	19B_030SMT00++_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	19B_09_V1	19B_030DR00++_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	19B_09_V1	19B_030DR0074_09_V1
Directly standardised rate	1993-2009	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	19B_09_V1	19B_030DRT00++_09_V1
19C_Survival following diagnosis of bladder cancer						
One year age-standardised relative survival rates (%)	2001-03	MFP	15-99	E GOR SHA CN	19C_03_V1	19C_406PCP1_03_V1
Five year age-standardised relative survival rates (%)	2001-03	MFP	15-99	E GOR SHA CN	19C_03_V1	19C_406PCP2_03_V1
19D_Deaths at home from bladder cancer						

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
Indirectly age-standardised rates	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	19D_09_V1	19D_198ISR_09_V1
Percent	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	19D_09_V1	19D_198PC_09_V1
19E_Years of life lost due to mortality from bladder cancer						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	19E_09_V1	19E_035CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	19E_09_V1	19E_035DR_09_V1
IC16_BREAST CANCER						
16A_Incidence of breast cancer						
Directly age-standardised registration rates (DSR)	2006-08	F	All ages	E&W E GOR ONS SHA LA PCO CTY	16A_08_V1	16A_033DR00++_08_V1
Directly age-standardised registration rates (DSR)	2006-08	F	<75	E&W E GOR ONS SHA LA PCO CTY	16A_08_V1	16A_033DR0074_08_V1
Directly age-standardised registration rates (DSR)	1993-2008	F	All ages	E&W E GOR ONS SHA LA PCO CTY	16A_08_V1	16A_033DRT00++_08_V1
Indirectly standardised registration ratio (SRR)	2006-08	F	All ages	E&W E GOR ONS SHA LA PCO CTY	16A_08_V1	16A_033SR00++_08_V1
Indirectly standardised registration ratio (SRR)	2006-08	F	<75	E&W E GOR ONS SHA LA PCO CTY	16A_08_V1	16A_033SR0074_08_V1
Indirectly standardised registration ratio (SRR)	1993-2008	F	All ages	E&W E GOR ONS SHA LA PCO CTY	16A_08_V1	16A_033SRT00++_08_V1
16B_Mortality from breast cancer						
Number	2009	F	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	16B_09_V1	16B_034NO_09_V1
Average age-specific death rate	2007-09	F	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	16B_09_V1	16B_034CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	F	All ages	E&W E GOR ONS SHA LA PCO CTY	16B_09_V1	16B_034SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	F	<75	E&W E GOR ONS SHA LA PCO CTY	16B_09_V1	16B_034SM0074_09_V1
Indirectly standardised ratio (SMR)	2007-09	F	50-64	E&W E GOR ONS SHA LA PCO CTY	16B_09_V1	16B_034SM5064_09_V1
Indirectly standardised ratio (SMR)	2007-09	F	50-69	E&W E GOR ONS SHA LA PCO CTY	16B_09_V1	16B_034SM5069_09_V1
Indirectly standardised ratio (SMR)	1993-2009	F	All ages	E&W E GOR ONS SHA LA PCO CTY	16B_09_V1	16B_034SMT00++_09_V1
Indirectly standardised ratio (SMR)	1993-2009	F	50-69	E&W E GOR ONS SHA LA PCO CTY	16B_09_V1	16B_034SMT5069_09_V1
Directly standardised rate	2007-09	F	All ages	E&W E GOR ONS SHA LA PCO CTY	16B_09_V1	16B_034DR00++_09_V1
Directly standardised rate	2007-09	F	<75	E&W E GOR ONS SHA LA PCO CTY	16B_09_V1	16B_034DR0074_09_V1
Directly standardised rate	2007-09	F	50-64	E&W E GOR ONS SHA LA PCO CTY	16B_09_V1	16B_034DR5064_09_V1
Directly standardised rate	2007-09	F	50-69	E&W E GOR ONS SHA LA PCO CTY	16B_09_V1	16B_034DR5069_09_V1
Directly standardised rate	1993-2009	F	All ages	E&W E GOR ONS SHA LA PCO CTY	16B_09_V1	16B_034DRT00++_09_V1
Directly standardised rate	1993-2009	F	50-69	E&W E GOR ONS SHA LA PCO CTY	16B_09_V1	16B_034DRT5069_09_V1
16C_Survival following diagnosis of breast cancer						
One year age-standardised relative survival rates (%)	2001-03	F	15-99	E GOR SHA CN	16C_03_V1	16C_407PCP1_03_V1
Five year age-standardised relative survival rates (%)	2001-03	F	15-99	E GOR SHA CN	16C_03_V1	16C_407PCP2_03_V1
16D_Deaths at home from breast cancer						
Indirectly age-standardised rates	2007-09	F	All ages	E&W E GOR ONS SHA LA PCO CTY	16D_09_V1	16D_195ISR_09_V1
Percent	2007-09	F	All ages	E&W E GOR ONS SHA LA PCO CTY	16D_09_V1	16D_195PC_09_V1
16E_Breast screening programme coverage						
Number and percent	As of 31 March	F	53-64	E GOR SHA PCO	16E_10_V1	16E_426PCP1_10_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
	2010					
Number and percent	As of 31 March 2010	F	53-70	E GOR SHA PCO	16E_10_V1	16E_426PCP2_10_V1
16G_Years of life lost due to mortality from breast cancer						
Crude rates (YLL)	2007-09	F	<75	E&W E GOR ONS SHA LA PCO CTY	16G_09_V1	16G_036CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	F	<75	E&W E GOR ONS SHA LA PCO CTY	16G_09_V1	16G_036DR_09_V1
ID17_CERVICAL CANCER						
17A_Incidence of cervical cancer						
Directly age-standardised registration ratios (DSR)	2006-08	F	All ages	E&W E GOR ONS SHA LA PCO CTY	17A_08_V1	17A_039_DR00++_08_V1
Directly age-standardised registration ratios (DSR)	2006-08	F	<75	E&W E GOR ONS SHA LA PCO CTY	17A_08_V1	17A_039DR0074_08_V1
Directly age-standardised registration ratios (DSR)	1993-2008	F	All ages	E&W E GOR ONS SHA LA PCO CTY	17A_08_V1	17A_039DRT00++_08_V1
Indirectly standardised registration ratio (SRR)	2006-08	F	All ages	E&W E GOR ONS SHA LA PCO CTY	17A_08_V1	17A_039SR00++_08_V1
Indirectly standardised registration ratio (SRR)	2006-08	F	<75	E&W E GOR ONS SHA LA PCO CTY	17A_08_V1	17A_039SR0074_08_V1
Indirectly standardised registration ratio (SRR)	1993-2008	F	All ages	E&W E GOR ONS SHA LA PCO CTY	17A_08_V1	17A_039SRT00++_08_V1
17B_Mortality from cervical cancer						
Number	2009	F	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	17B_09_V1	17B_040NO_09_V1
Average age-specific death rate	2007-09	F	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	17B_09_V1	17B_040CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	F	All ages	E&W E GOR ONS SHA LA PCO CTY	17B_09_V1	17B_040SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	F	<75	E&W E GOR ONS SHA LA PCO CTY	17B_09_V1	17B_040SM0074_09_V1
Indirectly standardised ratio (SMR)	2007-09	F	15-64	E&W E GOR ONS SHA LA PCO CTY	17B_09_V1	17B_040SM1564_09_V1
Indirectly standardised ratio (SMR)	2007-09	F	65-74	E&W E GOR ONS SHA LA PCO CTY	17B_09_V1	17B_040SM6574_09_V1
Indirectly standardised ratio (SMR)	1993-2009	F	All ages	E&W E GOR ONS SHA LA PCO CTY	17B_09_V1	17B_040SMT00++_09_V1
Directly standardised rate	2007-09	F	All ages	E&W E GOR ONS SHA LA PCO CTY	17B_09_V1	17B_040DR00++_09_V1
Directly standardised rate	2007-09	F	<75	E&W E GOR ONS SHA LA PCO CTY	17B_09_V1	17B_040DR0074_09_V1
Directly standardised rate	2007-09	F	15-64	E&W E GOR ONS SHA LA PCO CTY	17B_09_V1	17B_040DR1564_09_V1
Directly standardised rate	2007-09	F	65-74	E&W E GOR ONS SHA LA PCO CTY	17B_09_V1	17B_040DR6574_09_V1
Directly standardised rate	1993-2009	F	All ages	E&W E GOR ONS SHA LA PCO CTY	17B_09_V1	17B_040DRT00++_09_V1
17C_Survival following diagnosis of cervical cancer						
One year age-standardised relative survival rates (%)	2001-03	F	15-99	E GOR SHA CN	17C_03_V1	17C_408PCP1_03_V1
Five year age-standardised relative survival rates (%)	2001-03	F	15-99	E GOR SHA CN	17C_03_V1	17C_408PCP2_03_V1
17D_Deaths at home from cervical cancer						
Indirectly age-standardised rates	2007-09	F	All ages	E&W E GOR ONS SHA LA PCO CTY	17D_09_V1	17D_196ISR_09_V1
Percent	2007-09	F	All ages	E&W E GOR ONS SHA LA PCO CTY	17D_09_V1	17D_196PC_09_V1
17E_Cervical screening programme coverage						
Number and percent	As of 31 March 2010	F	25-64	E GOR SHA PCO	17E_10_V1	17E_427PC1_10_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
Number and percent	As of 31 March 2010	F	25-49	E GOR SHA PCO	17E_10_V1	17E_427PC2_10_V1
Number and percent	As of 31 March 2010	F	50-64	E GOR SHA PCO	17E_10_V1	17E_427PC3_10_V1
17F_Cytology: cervical cancer screening						
Number and percent of patients	FY2009/10	F	25-64	E GOR SHA PCO	17F_10_V1	17F_654PC_10_V1
17G_Years of life lost due to mortality from cervical cancer						
Crude rates (YLL)	2007-09	F	<75	E&W E GOR ONS SHA LA PCO CTY	17G_09_V1	17G_041CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	F	<75	E&W E GOR ONS SHA LA PCO CTY	17G_09_V1	17G_041DR_09_V1
IE13_COLORECTAL CANCER						
13A_Incidence of colorectal cancer						
Directly age-standardised registration ratios (DSR)	2006-08	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	13A_08_V1	13A_046DR00++_08_V1
Directly age-standardised registration ratios (DSR)	2006-08	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	13A_08_V1	13A_046DR0074_08_V1
Directly age-standardised registration ratios (DSR)	1993-2008	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	13A_08_V1	13A_046DRT00++_08_V1
Indirectly standardised registration ratio (SRR)	2006-08	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	13A_08_V1	13A_046SR00++_08_V1
Indirectly standardised registration ratio (SRR)	2006-08	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	13A_08_V1	13A_046SR0074_08_V1
Indirectly standardised registration ratio (SRR)	1993-2008	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	13A_08_V1	13A_SRT00++_08_V1
13B_Mortality from colorectal cancer						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	13B_09_V1	13B_047NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	13B_09_V1	13B_047CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	F	All ages	E&W E GOR ONS SHA LA PCO CTY	13B_09_V1	13B_047SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	F	<75	E&W E GOR ONS SHA LA PCO CTY	13B_09_V1	13B_047SM0074_09_V1
Indirectly standardised ratio (SMR)	1993-2009	F	All ages	E&W E GOR ONS SHA LA PCO CTY	13B_09_V1	13B_047SMT00++_09_V1
Directly standardised rate	2007-09	F	All ages	E&W E GOR ONS SHA LA PCO CTY	13B_09_V1	13B_047DR00++_09_V1
Directly standardised rate	2007-09	F	<75	E&W E GOR ONS SHA LA PCO CTY	13B_09_V1	13B_047DR0074_09_V1
Directly standardised rate	1993-2009	F	All ages	E&W E GOR ONS SHA LA PCO CTY	13B_09_V1	13B_047DRT00++_09_V1
13C_Survival following diagnosis of colon cancer						
One year age-standardised relative survival rates (%)	2001-03	MFP	15-99	E GOR SHA CN	13C_03_V1	13C_410PCP1_03_V1
Five year age-standardised relative survival rates (%)	2001-03	MFP	15-99	E GOR SHA CN	13C_03_V1	13C_410PCP2_03_V1
13D_Deaths at home from colorectal cancer						
Indirectly age-standardised rates	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	13D_09_V1	13D_193ISR_09_V1
Percent	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	13D_09_V1	13D_193PC_09_V1
13F_Years of life lost due to mortality from colorectal cancer						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	13F_09_V1	13F_042CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	13F_09_V1	13F_042DR_09_V1

Indicator Title / Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
IF20_HODGKIN'S DISEASE						
20A_Mortality from Hodgkin's disease						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	20A_09_V1	20A_078NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	20A_09_V1	20A_078CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	F	All ages	E&W E GOR ONS SHA LA PCO CTY	20A_09_V1	20A_078SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	F	<75	E&W E GOR ONS SHA LA PCO CTY	20A_09_V1	20A_078SM0074_09_V1
Indirectly standardised ratio (SMR)	2007-09	F	5-64	E&W E GOR ONS SHA LA PCO CTY	20A_09_V1	20A_078SM0564_09_V1
Indirectly standardised ratio (SMR)	1993-2009	F	All ages	E&W E GOR ONS SHA LA PCO CTY	20A_09_V1	20A_078SMT00++_09_V1
Directly standardised rate	2007-09	F	All ages	E&W E GOR ONS SHA LA PCO CTY	20A_09_V1	20A_078DR00++_09_V1
Directly standardised rate	2007-09	F	<75	E&W E GOR ONS SHA LA PCO CTY	20A_09_V1	20A_078DR0074_09_V1
Directly standardised rate	2007-09	F	5-64	E&W E GOR ONS SHA LA PCO CTY	20A_09_V1	20A_078DR0564_09_V1
Directly standardised rate	1993-2009	F	All ages	E&W E GOR ONS SHA LA PCO CTY	20A_09_V1	20A_078DRT00++_09_V1
20B_Years of life lost due to mortality from Hodgkin's disease						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	20B_09_V1	20B_048CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	20B_09_V1	20B_048DR_09_V1
IG21_LEUKAEMIA						
21A_Mortality from leukaemia						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	21A_09_V1	21A_103NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	21A_09_V1	21A_103CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	F	All ages	E&W E GOR ONS SHA LA PCO CTY	21A_09_V1	21A_103SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	F	<75	E&W E GOR ONS SHA LA PCO CTY	21A_09_V1	21A_103SM0074_09_V1
Indirectly standardised ratio (SMR)	1993-2009	F	All ages	E&W E GOR ONS SHA LA PCO CTY	21A_09_V1	21A_103SMT00++_09_V1
Directly standardised rate	2007-09	F	All ages	E&W E GOR ONS SHA LA PCO CTY	21A_09_V1	21A_103DR00++_09_V1
Directly standardised rate	2007-09	F	<75	E&W E GOR ONS SHA LA PCO CTY	21A_09_V1	21A_103DR0074_09_V1
Directly standardised rate	1993-2009	F	All ages	E&W E GOR ONS SHA LA PCO CTY	21A_09_V1	21A_103DRT00++_09_V1
21B_Years of life lost due to mortality from leukaemia						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	21B_09_V1	21B_049CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	21B_09_V1	21B_049DR_09_V1
IH14_LUNG CANCER						
14A_Incidence of lung cancer						
Directly age-standardised registration rates (DSR)	2006-08	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	14A_08_V1	14A_104DR00++_08_V1
Directly age-standardised registration rates (DSR)	2006-08	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	14A_08_V1	14A_104DR0074_08_V1
Directly age-standardised registration rates (DSR)	1993-2008	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	14A_08_V1	14A_104DRT00++_08_V1
Indirectly standardised registration ratio (SRR)	2006-08	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	14A_08_V1	14A_104SR00++_08_V1
Indirectly standardised registration ratio (SRR)	2006-08	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	14A_08_V1	14A_104SR0074_08_V1
Indirectly standardised registration ratio	1993-2008	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	14A_08_V1	14A_104SRT00++_08_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
(SRR)						
14B_Mortality from lung cancer						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	14B_09_V1	14B_105NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	14B_09_V1	14B_105CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	14B_09_V1	14B_105SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	14B_09_V1	14B_105SM0074_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	14B_09_V1	14B_105SMT00++_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	14B_09_V1	14B_105SMT0074_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	14B_09_V1	14B_105DR00++_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	14B_09_V1	14B_105DR0074_09_V1
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	14B_09_V1	14B_105DRT00++_09_V1
Directly standardised rate	1993-2009	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	14B_09_V1	14B_105DRT0074_09_V1
14C_Survival following diagnosis of lung cancer						
One year age-standardised relative survival rates (%)	2001-03	MFP	15-99	E GOR SHA CN	14C_03_V1	14C_409PCP1_03_V1
Five year age-standardised relative survival rates (%)	2001-03	MFP	15-99	E GOR SHA CN	14C_03_V1	14C_409PCP2_03_V1
14D_Deaths at home from lung cancer						
Indirectly age-standardised rates	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	14D_09_V1	14D_194ISR_09_V1
Percent	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	14D_09_V1	14D_194PC_09_V1
14E_Years of life lost due to mortality from lung cancer						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	14E_09_V1	14E_050CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	14E_09_V1	14E_050DR_09_V1
II37_OESOPHAGEAL CANCER						
37A_Incidence of oesophageal cancer						
Directly age-standardised registration rates (DSR)	2006-08	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	37A_08_V1	37A_188DR00++_08_V1
Directly age-standardised registration rates (DSR)	2006-08	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	37A_08_V1	37A_188DR0074_08_V1
Directly age-standardised registration rates (DSR)	1993-2008	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	37A_08_V1	37A_188DRT00++_08_V1
Indirectly standardised registration ratio (SRR)	2006-08	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	37A_08_V1	37A_188SR00++_08_V1
Indirectly standardised registration ratio (SRR)	2006-08	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	37A_08_V1	37A_188SR0074_08_V1
Indirectly standardised registration ratio (SRR)	1993-2008	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	37A_08_V1	37A_188SRT00++_08_V1
37B_Mortality from oesophageal cancer						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	37B_09_V1	37B_189NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	37B_09_V1	37B_189CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	37B_09_V1	37B_189SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	37B_09_V1	37B_189SM0074_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	37B_09_V1	37B_189SMT00++_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	37B_09_V1	37B_189DR00++_09_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	37B_09_V1	37B_189DR0074_09_V1
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	37B_09_V1	37B_189DRT00++_09_V1
37C_Survival following diagnosis of oesophageal cancer						
One year age-standardised relative survival rates (%)	2001-03	M	15-99	E GOR SHA CN	37C_03_V1	37C_404PCP1_03_V1
Five year age-standardised relative survival rates (%)	2001-03	M	15-99	E GOR SHA CN	37C_03_V1	37C_404PCP2_03_V1
37D_Deaths at home from oesophageal cancer						
Indirectly age-standardised rates	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	37D_09_V1	37D_199ISR_09_V1
Percent	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	37D_09_V1	37D_199PC_09_V1
37E_Years of life lost due to mortality from oesophageal cancer						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	37E_09_V1	37E_052CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	37E_09_V1	37E_052DR_09_V1
IJ18_PROSTATE CANCER						
18A_Incidence of prostate cancer						
Directly age-standardised registration rates (DSR)	2006-08	M	All ages	E&W E GOR ONS SHA LA PCO CTY	18A_08_V1	18A_147DR00++_08_V1
Directly age-standardised registration rates (DSR)	2006-08	M	<75	E&W E GOR ONS SHA LA PCO CTY	18A_08_V1	18A_147DR0074_08_V1
Directly age-standardised registration rates (DSR)	1993-2008	M	All ages	E&W E GOR ONS SHA LA PCO CTY	18A_08_V1	18A_147DRT00++_08_V1
Indirectly standardised registration ratio (SRR)	2006-08	M	All ages	E&W E GOR ONS SHA LA PCO CTY	18A_08_V1	18A_147SR00++_08_V1
Indirectly standardised registration ratio (SRR)	2006-08	M	<75	E&W E GOR ONS SHA LA PCO CTY	18A_08_V1	18A_147SR0074_08_V1
Indirectly standardised registration ratio (SRR)	1993-2008	M	All ages	E&W E GOR ONS SHA LA PCO CTY	18A_08_V1	18A_147SRT00++_08_V1
18B_Mortality from prostate cancer						
Number	2009	M	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	18B_09_V1	18B_148NO_09_V1
Average age-specific death rate	2007-09	M	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	18B_09_V1	18B_148CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	M	All ages	E&W E GOR ONS SHA LA PCO CTY	18B_09_V1	18B_148SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	M	<75	E&W E GOR ONS SHA LA PCO CTY	18B_09_V1	18B_148SM0074_09_V1
Indirectly standardised ratio (SMR)	1993-2009	M	All ages	E&W E GOR ONS SHA LA PCO CTY	18B_09_V1	18B_148SMT00++_09_V1
Directly standardised rate	2007-09	M	All ages	E&W E GOR ONS SHA LA PCO CTY	18B_09_V1	18B_148DR00++_09_V1
Directly standardised rate	2007-09	M	<75	E&W E GOR ONS SHA LA PCO CTY	18B_09_V1	18B_148DR0074_09_V1
Directly standardised rate	1993-2009	M	All ages	E&W E GOR ONS SHA LA PCO CTY	18B_09_V1	18B_148DRT00++_09_V1
18C_Survival following diagnosis of prostate cancer						
One year age-standardised relative survival rates (%)	2001-03	M	15-99	E GOR SHA CN	18C_03_V1	18C_411PCP1_03_V1
Five year age-standardised relative survival rates (%)	2001-03	M	15-99	E GOR SHA CN	18C_03_V1	18C_411PCP2_03_V1
18D_Deaths at home from prostate cancer						
Indirectly age-standardised rates	2007-09	M	All ages	E&W E GOR ONS SHA LA PCO CTY	18D_09_V1	18D_197ISR_09_V1
Percent	2007-09	M	All ages	E&W E GOR ONS SHA LA PCO CTY	18D_09_V1	18D_197PC_09_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
18E_Years of life lost due to mortality from prostate cancer						
Crude rates (YLL)	2007-09	M	<75	E&W E GOR ONS SHA LA PCO CTY	18E_09_V1	18E_053CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	M	<75	E&W E GOR ONS SHA LA PCO CTY	18E_09_V1	18E_053DR_09_V1
IK15_SKIN CANCER						
15A_Incidence of malignant melanoma						
Directly age-standardised registration rates (DSR)	2006-08	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	15A_08_V1	15A_150DR00++_08_V1
Directly age-standardised registration rates (DSR)	2006-08	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	15A_08_V1	15A_150DR0074_08_V1
Directly age-standardised registration rates (DSR)	1993-2008	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	15A_08_V1	15A_150DRT00++_08_V1
Indirectly standardised registration ratio (SRR)	2006-08	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	15A_08_V1	15A_150SR00++_08_V1
Indirectly standardised registration ratio (SRR)	2006-08	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	15A_08_V1	15A_150SR0074_08_V1
Indirectly standardised registration ratio (SRR)	1993-2008	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	15A_08_V1	15A_150DRT00++_08_V1
15B_Incidence of skin cancers other than malignant melanoma						
Directly age-standardised registration rates (DSR)	2006-08	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	15B_08_V1	15B_151DR00++_08_V1
Directly age-standardised registration rates (DSR)	2006-08	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	15B_08_V1	15B_151DR0074_08_V1
Directly age-standardised registration rates (DSR)	1993-2008	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	15B_08_V1	15B_151DRT00++_08_V1
Indirectly standardised registration ratio (SRR)	2006-08	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	15B_08_V1	15B_151SR00++_08_V1
Indirectly standardised registration ratio (SRR)	2006-08	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	15B_08_V1	15B_151SR0074_08_V1
Indirectly standardised registration ratio (SRR)	1993-2008	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	15B_08_V1	15B_151SRT00++_08_V1
15C_Incidence of all skin cancers						
Directly age-standardised registration rates (DSR)	2006-08	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	15C_08_V1	15C_176DR00++_08_V1
Directly age-standardised registration rates (DSR)	2006-08	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	15C_08_V1	15C_176DR0074_08_V1
Directly age-standardised registration rates (DSR)	1993-2008	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	15C_08_V1	15C_176DRT00++_08_V1
Indirectly standardised registration ratio (SRR)	2006-08	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	15C_08_V1	15C_176SR00++_08_V1
Indirectly standardised registration ratio (SRR)	2006-08	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	15C_08_V1	15C_176SR0074_08_V1
Indirectly standardised registration ratio (SRR)	1993-2008	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	15C_08_V1	15C_176SRT00++_08_V1
15D_Mortality from malignant melanoma						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	15D_09_V1	15D_152NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	15D_09_V1	15D_152CR_09_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	15D_09_V1	15D_152SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	15D_09_V1	15D_152SM0074_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	15D_09_V1	15D_152SMT00++_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	15D_09_V1	15D_152DR00++_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	15D_09_V1	15D_152DR0074_09_V1
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	15D_09_V1	15D_152DRT00++_09_V1
15E_Mortality from skin cancers other than malignant melanoma						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	15E_09_V1	15E_153NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	15E_09_V1	15E_153CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	15E_09_V1	15E_153SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	15E_09_V1	15E_153SM0074_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	15E_09_V1	15E_153SMT00++_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	15E_09_V1	15E_153DR00++_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	15E_09_V1	15E_153DR0074_09_V1
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	15E_09_V1	15E_153DRT00++_09_V1
15F_Years of life lost due to mortality from malignant melanoma						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	15F_09_V1	15F_056CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	15F_09_V1	15F_056DR_09_V1
15G_Years of life lost due to mortality from skin cancers other than malignant melanoma						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	15G_09_V1	15G_058CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	15G_09_V1	15G_058DR_09_V1
IL12_STOMACH CANCER						
12A_Incidence of stomach cancer						
Directly age-standardised registration rates (DSR)	2006-08	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	12A_08_V1	12A_154DR00++_08_V1
Directly age-standardised registration rates (DSR)	2006-08	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	12A_08_V1	12A_154DR0074_08_V1
Directly age-standardised registration rates (DSR)	1993-2008	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	12A_08_V1	12A_154DRT00++_08_V1
Indirectly standardised registration ratio (SRR)	2006-08	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	12A_08_V1	12A_154SR00++_08_V1
Indirectly standardised registration ratio (SRR)	2006-08	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	12A_08_V1	12A_154SR0074_08_V1
Indirectly standardised registration ratio (SRR)	1993-2008	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	12A_08_V1	12A_154SRT00++_08_V1
12B_Mortality from stomach cancer						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	12B_09_V1	12B_155NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	12B_09_V1	12B_155CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	12B_09_V1	12B_155SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	12B_09_V1	12B_155SM0074_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	12B_09_V1	12B_155SMT00++_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	12B_09_V1	12B_155DR00++_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	12B_09_V1	12B_155DR0074_09_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	12B_09_V1	12B_155DRT00++_09_V1
12C_Survival following diagnosis of stomach cancer						
One year age-standardised relative survival rates (%)	2001-03	M	15-99	E GOR SHA CN	12C_03_V1	12C_405PCP1_03_V1
Five year age-standardised relative survival rates (%)	2001-03	M	15-99	E GOR SHA CN	12C_03_V1	12C_405PCP2_03_V1
12D_Deaths at home from stomach cancer						
Indirectly age-standardised rates	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	12D_09_V1	12D_192ISR_09_V1
Percent	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	12D_09_V1	12D_192PC_09_V1
12E_Years of life lost due to mortality from stomach cancer						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	12E_09_V1	12E_062CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	12E_09_V1	12E_062DR_09_V1
JA06_ALL CIRCULATORY DISEASES						
06A_Mortality from all circulatory diseases						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	06A_09_V1	06A_076NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	06A_09_V1	06A_076CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	06A_09_V1	06A_076SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<65	E&W E GOR ONS SHA LA PCO CTY	06A_09_V1	06A_076SM0064_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	06A_09_V1	06A_076SM0074_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	65-74	E&W E GOR ONS SHA LA PCO CTY	06A_09_V1	06A_076SM6574_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	06A_09_V1	06A_076SMT00++_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	<65	E&W E GOR ONS SHA LA PCO CTY	06A_09_V1	06A_076SMT0064_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	06A_09_V1	06A_076SMT0074_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	65-74	E&W E GOR ONS SHA LA PCO CTY	06A_09_V1	06A_076SMT6574_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	06A_09_V1	06A_076DR00++_09_V1
Directly standardised rate	2007-09	MFP	<65	E&W E GOR ONS SHA LA PCO CTY	06A_09_V1	06A_076DR0064_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	06A_09_V1	06A_076DR0074_09_V1
Directly standardised rate	2007-09	MFP	65-74	E&W E GOR ONS SHA LA PCO CTY	06A_09_V1	06A_076DR6574_09_V1
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	06A_09_V1	06A_076DRT00++_09_V1
Directly standardised rate	1993-2009	MFP	<65	E&W E GOR ONS SHA LA PCO CTY	06A_09_V1	06A_076DRT0064_09_V1
Directly standardised rate	1993-2009	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	06A_09_V1	06A_076DRT0074_09_V1
Directly standardised rate	1993-2009	MFP	65-74	E&W E GOR ONS SHA LA PCO CTY	06A_09_V1	06A_076DRT6574_09_V1
Directly standardised rate	1995-97 (OHN baseline)	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	06A_09_V1	06A_076DRP0074_97_V5
06B_Years of life lost due to mortality from all circulatory diseases						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	06B_09_V1	06B_107CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	06B_09_V1	06B_107DR_09_V1
JB07_CHRONIC RHEUMATIC HEART DISEASE						
07A_Mortality from chronic rheumatic heart disease						
Indirectly standardised ratio (SMR)	2007-09	MFP	All Ages	E&W E GOR ONS SHA LA PCO CTY	07A_09_V1	07A_135SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	07A_09_V1	07A_135SM0074_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	5-44	E&W E GOR ONS SHA LA PCO CTY	07A_09_V1	07A_135SM0544_09_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
Directly standardised rate	2007-09	MFP	All Ages	E&W E GOR ONS SHA LA PCO CTY	07A_09_V1	07A_135DR00++_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	07A_09_V1	07A_135DR0074_09_V1
Directly standardised rate	2007-09	MFP	5-44	E&W E GOR ONS SHA LA PCO CTY	07A_09_V1	07A_135DR0544_09_V1
JC09_CORONARY HEART DISEASE						
09A_Mortality from coronary heart disease						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	09A_09_V1	09A_054NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	09A_09_V1	09A_054CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	All Ages	E&W E GOR ONS SHA LA PCO CTY	09A_09_V1	09A_054SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<65	E&W E GOR ONS SHA LA PCO CTY	09A_09_V1	09A_054SM0064_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	09A_09_V1	09A_054SM0074_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	65-74	E&W E GOR ONS SHA LA PCO CTY	09A_09_V1	09A_054SM6574_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All Ages	E&W E GOR ONS SHA LA PCO CTY	09A_09_V1	09A_054SMT00++_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	<65	E&W E GOR ONS SHA LA PCO CTY	09A_09_V1	09A_054SMT0064_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	09A_09_V1	09A_054SMT0074_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	65-74	E&W E GOR ONS SHA LA PCO CTY	09A_09_V1	09A_054SMT6574_09_V1
Directly standardised rate	2007-09	MFP	All Ages	E&W E GOR ONS SHA LA PCO CTY	09A_09_V1	09A_054DR00++_09_V1
Directly standardised rate	2007-09	MFP	<65	E&W E GOR ONS SHA LA PCO CTY	09A_09_V1	09A_054DR0064_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	09A_09_V1	09A_054DR0074_09_V1
Directly standardised rate	2007-09	MFP	65-74	E&W E GOR ONS SHA LA PCO CTY	09A_09_V1	09A_054DR6574_09_V1
Directly standardised rate	1993-2009	MFP	All Ages	E&W E GOR ONS SHA LA PCO CTY	09A_09_V1	09A_054DRT00++_09_V1
Directly standardised rate	1993-2009	MFP	<65	E&W E GOR ONS SHA LA PCO CTY	09A_09_V1	09A_054DRT0064_09_V1
Directly standardised rate	1993-2009	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	09A_09_V1	09A_054DRT0074_09_V1
Directly standardised rate	1993-2009	MFP	65-74	E&W E GOR ONS SHA LA PCO CTY	09A_09_V1	09A_054DRT6574_09_V1
09B_Mortality from acute myocardial infarctio						
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	09B_09_V1	09B_055SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	09B_09_V1	09B_055SM0074_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	35-64	E&W E GOR ONS SHA LA PCO CTY	09B_09_V1	09B_055SM3564_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	09B_09_V1	09B_055SMT00++_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	09B_09_V1	09B_055DR00++_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	09B_09_V1	09B_055DR0074_09_V1
Directly standardised rate	2007-09	MFP	35-64	E&W E GOR ONS SHA LA PCO CTY	09B_09_V1	09B_055DR3564_09_V1
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	09B_09_V1	09B_055DRT00++_09_V1
09C_Mortality from ischaemic heart disease other than acute myocardial infarction						
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	09C_09_V1	09C_178SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	35-64	E&W E GOR ONS SHA LA PCO CTY	09C_09_V1	09C_178SM3564_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	09C_09_V1	09C_178DR00++_09_V1
Directly standardised rate	2007-09	MFP	35-64	E&W E GOR ONS SHA LA PCO CTY	09C_09_V1	09C_178DR3564_09_V1
09E_Deaths within 30 days of emergency admission to hospital: myocardial infarction						
Indirectly age, sex and diagnosis standardised rates	FY1999/00 to FY2008/09	P	35-74	E GOR ONS SHA LA PCO CTY	09E_09_V1	09E_212ISR3AP_09_V1
Indirectly age, sex and diagnosis standardised rates	FY1999/00 to FY2008/09	F	35-74	E GOR ONS SHA LA PCO CTY	09E_09_V1	09E_212ISR3AF_09_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
Indirectly age, sex and diagnosis standardised rates	FY1999/00 to FY2008/09	M	35-74	E GOR ONS SHA LA PCO CTY	09E_09_V1	09E_212ISR3AM_09_V1
09F_Deaths within 30 days of a hospital procedure: coronary artery bypass graft						
Indirectly age, sex and method of admission standardised rates	FY1999/00 to FY2008/09	P	All ages	E GOR ONS SHA LA PCO CTY E	09F_09_V1	09F_211ISR1CPP1_09_V1 09F_211ISR1CPP2_09_V1
Indirectly age, sex and method of admission standardised rates	FY1999/00 to FY2008/09	F	All ages	E GOR ONS SHA LA PCO CTY E	09F_09_V1	09F_211ISR1CFP1_09_V1 09F_211ISR1CFP2_09_V1
Indirectly age, sex and method of admission standardised rates	FY1999/00 to FY2008/09	M	All ages	E GOR ONS SHA LA PCO CTY E	09F_09_V1	09F_211ISR1CMP1_09_V1 09F_211ISR1CMP2_09_V1
09H_Prevalnce: coronary heart disease						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	09H_10_V1	09H_600PC_10_V1
09I_Exercise testing / specialist referral for patients with newly diagnosed angina						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	09I_10_V1	09I_601PC_10_V1
09K_Blood pressure in patients with coronary heart disease						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	09K_10_V1	09K_603PC_10_V1
09L_Cholesterol levels in patients with coronary heart disease						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	09L_10_V1	09L_604PC_10_V1
09M_Antiplatelet / anti-coagulant therapy for patients with coronary heart disease						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	09M_10_V1	09M_605PC_10_V1
09N_Beta blocker therapy for patients with coronary heart disease						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	09N_10_V1	09N_606PC_10_V1
09O_ACE inhibitor therapy for patients with myocardial infarction						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	090_10_V1	090_607PC_10_V1
09P_Vaccination: influencza, for patients with coronary heart disease						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	09P_10_V1	09P_608PC_10_V1
09S_Years of life lost due to mortality from coronary heart disease						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	09S_09_V1	09S_064CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	09S_09_V1	09S_064DR_09_V1
09T_Prevalnce: heart failure						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	09T_10_V1	09T_655PC_10_V1
09U_Prevalnce: heart failure confirmed by echocardiogram or specialist assessment						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	09U_10_V1	09U_656PC_10_V1
09V_ACE inhibitor therapy for patients with heart failure due to left ventricular dysfunction						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	09V_10_V1	09V_657PC_10_V1
09W_ACE inhibitorand beta blocker therapy for patients with heart failure due to left ventricular dysfunction						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	09W_10_V1	09W_677PC_10_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
JD08_HYPERTENSIVE DISEASES						
08A_Mortality from hypertensive disease						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	08A_09_V1	08A_057NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	08A_09_V1	08A_057CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	08A_09_V1	08A_057SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	08A_09_V1	08A_057SM0074_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	08A_09_V1	08A_057SMT00++_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	08A_09_V1	08A_057SMT0074_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	08A_09_V1	08A_057DR00++_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	08A_09_V1	08A_057DR0074_09_V1
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	08A_09_V1	08A_057DRT00++_09_V1
Directly standardised rate	1993-2009	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	08A_09_V1	08A_057DRT0074_09_V1
08B_Systolic blood pressure						
Mean and age-standardised mean	2001-03 2005-07 2006-08	MFP	16+	E GOR ONS SHA CTY	08B_08_V1	08B_305VSP1_08_V1
Mean and age-standardised mean	1998, 2000, 2001, 2002, 2003, 2005, 2006, 2007, 2008	MFP	16+	E GOR ONS SHA CTY	08B_08_V1	08B_305VSP2_08_V1
08C_Diastolic blood pressure						
Mean and age-standardised mean	2001-03 2005-07 2006-08	MFP	16+	E GOR ONS SHA CTY	08C_08_V1	08C_306VSP1_08_V1
Mean and age-standardised mean	1998, 2000, 2001, 2002, 2003, 2005, 2006, 2007, 2008	MFP	16+	E GOR ONS SHA CTY	08C_08_V1	08C_306VSP2_08_V1
08D_High blood pressure						
Mean and age-standardised mean	2001-03 2005-07 2006-08	MFP	16+	E GOR ONS SHA CTY	08D_08_V1	08D_307VSP1_08_V1
Mean and age-standardised mean	1998, 2000, 2001, 2002, 2003, 2005, 2006, 2007, 2008	MFP	16+	E GOR ONS SHA CTY	08D_08_V1	08D_307VSP2_08_V1
08E_Treated and controlled high blood pressure						
Number, percent and age-standardised percent	2001-03 2005-07 2006-08	MFP	16+	E GOR ONS SHA CTY	08E_08_V1	08E_323VSP1_08_V1
Number, percent and age-standardised percent	1998, 2000, 2001, 2002,	MFP	16+	E GOR ONS SHA CTY	08E_08_V1	08E_323VSP2_08_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
	2003, 2005, 2006, 2007, 2008					
08F_Prevalence: hypertension						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	08F_10_V1	08F_618PC_10_V1
08H_Controlled high blood pressure in patients with hypertension						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	08H_10_V1	08H_620PC_10_V1
08I_Years of life lost due to mortality from hypertensive disease						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	08I_09_V1	08I_065CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	08I_09_V1	08I_065DR_09_V1
08J_Cardiovascular risk assessment in patients with hypertension						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	08J_10_V1	08J_682PC_10_V1
08K_Lifestyle advice for patients with hypertension						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	08K_10_V1	08K_683PC_10_V1
JE10_STROKE						
10A_Mortality from stroke						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	10A_09_V1	10A_158NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	10A_09_V1	10A_158CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	10A_09_V1	10A_158SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<65	E&W E GOR ONS SHA LA PCO CTY	10A_09_V1	10A_158SM0064_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	10A_09_V1	10A_158SM0074_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	35-64	E&W E GOR ONS SHA LA PCO CTY	10A_09_V1	10A_158SM3564_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	65-74	E&W E GOR ONS SHA LA PCO CTY	10A_09_V1	10A_158SM6574_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	10A_09_V1	10A_158SMT00++_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	<65	E&W E GOR ONS SHA LA PCO CTY	10A_09_V1	10A_158SMT0064_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	10A_09_V1	10A_158SMT0074_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	65-74	E&W E GOR ONS SHA LA PCO CTY	10A_09_V1	10A_158SMT6574_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	10A_09_V1	10A_158DR00++_09_V1
Directly standardised rate	2007-09	MFP	<65	E&W E GOR ONS SHA LA PCO CTY	10A_09_V1	10A_158DR0064_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	10A_09_V1	10A_158DR0074_09_V1
Directly standardised rate	2007-09	MFP	35-64	E&W E GOR ONS SHA LA PCO CTY	10A_09_V1	10A_158DR3564_09_V1
Directly standardised rate	2007-09	MFP	65-74	E&W E GOR ONS SHA LA PCO CTY	10A_09_V1	10A_158DR6574_09_V1
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	10A_09_V1	10A_158DRT00++_09_V1
Directly standardised rate	1993-2009	MFP	<65	E&W E GOR ONS SHA LA PCO CTY	10A_09_V1	10A_158DRT0064_09_V1
Directly standardised rate	1993-2009	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	10A_09_V1	10A_158DRT0074_09_V1
Directly standardised rate	1993-2009	MFP	65-74	E&W E GOR ONS SHA LA PCO CTY	10A_09_V1	10A_158DRT6574_09_V1
10B_Deaths within 30 days of emergency admission to hospital: stroke						
Indirectly age and sex standardised rates	FY1999/00 to FY2008/09	P	All ages	E GOR ONS SHA LA PCO CTY	10B_09_V1	10B_230ISR3BP_09_V1
Indirectly age and sex standardised rates	FY1999/00 to FY2008/09	F	All ages	E GOR ONS SHA LA PCO CTY	10B_09_V1	10B_230ISR3BF_09_V1
Indirectly age and sex standardised rates	FY1999/00 to FY2008/09	M	All ages	E GOR ONS SHA LA PCO CTY	10B_09_V1	10B_230ISR3BM_09_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
10C_Emergency hospital admissions: stroke						
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	P	All ages	E GOR ONS SHA LA PCO CTY	10C_09_V1	10C_528ISR7CP_09_V1
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	F	All ages	E GOR ONS SHA LA PCO CTY	10C_09_V1	10C_528ISR7CP_09_V1
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	M	All ages	E GOR ONS SHA LA PCO CTY	10C_09_V1	10C_528ISR7CP_09_V1
10D_Emergency readmissions to hospital within 28 days of discharge: stroke						
Indirectly age and sex standardised percent	FY1999/00 to FY2008/09	P	All ages	E GOR ONS SHA LA PCO CTY NHST	10D_09_V1	10D_529ISP4GP_09_V1
Indirectly age and sex standardised percent	FY1999/00 to FY2008/09	F	All ages	E GOR ONS SHA LA PCO CTY NHST	10D_09_V1	10D_529ISP4GF_09_V1
Indirectly age and sex standardised percent	FY1999/00 to FY2008/09	M	All ages	E GOR ONS SHA LA PCO CTY NHST	10D_09_V1	10D_529ISP4GM_09_V1
10E_Returning to usual place of residence following hospital treatment: stroke						
Indirectly age and sex standardised percent	FY1999/00 to FY2008/09	P	All ages	E GOR ONS SHA LA PCO CTY NHST	10E _09_V1	10E_250ISP5P_09_V1
Indirectly age and sex standardised percent	FY1999/00 to FY2008/09	F	All ages	E GOR ONS SHA LA PCO CTY NHST	10E _09_V1	10E_250ISP5F_09_V1
Indirectly age and sex standardised percent	FY1999/00 to FY2008/09	M	All ages	E GOR ONS SHA LA PCO CTY NHST	10E _09_V1	10E_250ISP5M_09_V1
10F_Prevalence: stroke or transient ischaemic attacks						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	10F_10_V1	10F_611PC_10_V1
10G_Referral of patients with stroke for further investigation						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	10G_10_V1	10G_612PC_10_V1
10I_Blood pressure in patients with stroke or transient ischaemic attack						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	10I_10_V1	10I_614PC_10_V1
10J_Cholesterol levels in patients with stroke or transient ischaemic attack						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	10J_10_V1	10J_615PC_10_V1
10K_Antiplatelet / anti-coagulant therapy for patients with stroke or transient ischaemic attack						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	10K_10_V1	10K_616PC_10_V1
10L_Vaccination: influenza, for patients with stroke or transient ischaemic attack						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	10L_10_V1	10L_617PC_10_V1
10M_Years of life lost due to mortality from stroke						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	10M_09_V1	10M_066CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	10M_09_V1	10M_066DR_09_V1
JF39_ATRIAL FIBRILLATION						
39A_Prevalence: atrial fibrillation						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	39A_10_V1	39A_658PC_10_V1
39B_Prevalence: atrial fibrillation confirmed by ECG or specialist						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	39B_10_V1	39B_659PC_10_V1
39C_ Antiplatelet / anti-coagulant therapy for patients with atrial fibrillation						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	39C_10_V1	39C_660PC_10_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
KA25_CHRONIC LIVER DISEASE						
25A_Mortality from chronic liver disease including cirrhosis						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	25A_09_V1	25A_043NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	25A_09_V1	25A_043CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	25A_09_V1	25A_043SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	25A_09_V1	25A_043SM0074_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	25A_09_V1	25A_043SMT00++_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	25A_09_V1	25A_043DR00++_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	25A_09_V1	25A_043DR0074_09_V1
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	25A_09_V1	25A_043DRT00++_09_V1
25B_Years of life lost due to mortality from chronic liver disease including cirrhosis						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	25B_09_V1	25B_067CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	25B_09_V1	25B_067DR_09_V1
LA26_CHRONIC RENAL FAILURE						
26A_Mortality from chronic renal failure						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	26A_09_V1	26A_045NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	26A_09_V1	26A_045CR_09_V1
Indirectly standardised ratio (SMR)	2002-05	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	26A_09_V1	26A_045SM00++_09_V1
Indirectly standardised ratio (SMR)	2002-05	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	26A_09_V1	26A_045SM0074_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	26A_09_V1	26A_045SMT00++_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	26A_09_V1	26A_045DR00++_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	26A_09_V1	26A_045DR0074_09_V1
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	26A_09_V1	26A_045DRT00++_09_V1
26B_Years of life lost due to mortality from chronic renal failure						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	26B_09_V1	26B_068CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	26B_09_V1	26B_068DR_09_V1
26C_Prevalence: chronic kidney disease						
Number and percent of patients (adjusted for age)	FY2009/10	P	18+	E GOR SHA PCO	26C_10_V1	26C_661PC_10_V1
26D_Normal blood pressure in patients with chronic kidney disease						
Number and percent of patients	FY2009/10	P	18+	E GOR SHA PCO	26D_10_V1	26D_662PC_10_V1
26E_ACE inhibitor / ARB therapy for chronic kidney disease patients with hypertension and proteinuria						
Number and percent of patients	FY2009/10	P	18+	E GOR SHA PCO	26E_10_V1	26E_663PC_10_V1
26F_Kidney function testing in patients with chronic kidney disease						
Number and percent of patients	FY2009/10	P	18+	E GOR SHA PCO	26F_10_V1	26F_678PC_10_V1
MA27_DIABETES MELLITUS						
27A_Emergency hospital admissions: diabetic ketoacedosis and coma						
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	P	All ages	E GOR ONS SHA LA PCO CTY	27A_09_V1	27A_059ISR7PP_09_V1
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	F	All ages	E GOR ONS SHA LA PCO CTY	27A_09_V1	27A_059ISR7PF_09_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	M	All ages	E GOR ONS SHA LA PCO CTY	27A_09_V1	27A_059ISR7PM_09_V1
27B_Hospital admissions: lower limb amputations in diabetic patients						
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	P	All ages	E GOR ONS SHA LA PCO CTY	27B_09_V1	27B_060ISR7OP_09_V1
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	F	All ages	E GOR ONS SHA LA PCO CTY	27B_09_V1	27B_060ISR7OF_09_V1
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	M	All ages	E GOR ONS SHA LA PCO CTY	27B_09_V1	27B_060ISR7OM_09_V1
27C_Mortality from diabetes						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	27C_09_V1	27C_061NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	27C_09_V1	27C_061CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	27C_09_V1	27C_061SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	27C_09_V1	27C_061SM0074_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	1-44	E&W E GOR ONS SHA LA PCO CTY	27C_09_V1	27C_061SM0144_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	27C_09_V1	27C_061SMT00++_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	27C_09_V1	27C_061DR00++_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	27C_09_V1	27C_061DR0074_09_V1
Directly standardised rate	2007-09	MFP	1-44	E&W E GOR ONS SHA LA PCO CTY	27C_09_V1	27C_061DR00144_09_V1
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	27C_09_V1	27C_061DRT00++_09_V1
27D_Prevalence: diabetes mellitus						
Number and percent of patients (adjusted for age)	FY2009/10	P	17+	E GOR SHA PCO	27D_10_V1	27D_621PC_10_V1
27F_Controlled blood glucose levels (7 or less) in patients with diabetes mellitus						
Number and percent of patients	FY2009/10	P	17+	E GOR SHA PCO	27F_10_V1	27F_623PC_10_V1
27G_Blood glucose levels in (9 or less) in patients with diabetes mellitus						
Number and percent of patients	FY2009/10	P	17+	E GOR SHA PCO	27G_10_V1	27G_624PC_10_V1
27H_Retinal screening in patients with diabetes mellitus						
Number and percent of patients	FY2009/10	P	17+	E GOR SHA PCO	27H_10_V1	27H_625PC_10_V1
27I_Peripheral pulse checking in patients with diabetes mellitus						
Number and percent of patients	FY2009/10	P	17+	E GOR SHA PCO	27I_10_V1	27I_626PC_10_V1
27J_Neuropathy testing in patients with diabetes mellitus						
Number and percent of patients	FY2009/10	P	17+	E GOR SHA PCO	27J_10_V1	27J_627PC_10_V1
27K_Blood pressure in patients with diabetes mellitus						
Number and percent of patients	FY2009/10	P	17+	E GOR SHA PCO	27K_10_V1	27K_628PC_10_V1
27L_Micro-albuminuria testing in patients with diabetes mellitus						
Number and percent of patients	FY2009/10	P	17+	E GOR SHA PCO	27L_10_V1	27L_629PC_10_V1
27M_Renal function testing in patients with diabetes mellitus						
Number and percent of patients	FY2009/10	P	17+	E GOR SHA PCO	27M_10_V1	27M_630PC_10_V1
27N_ACE inhibitor therapy for patients with diabetes mellitus						
Number and percent of patients	FY2009/10	P	17+	E GOR SHA PCO	27N_10_V1	27N_631PC_10_V1
27O_Cholesterol levels in patients with diabetes mellitus						

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
Number and percent of patients	FY2009/10	P	17+	E GOR SHA PCO	27O_10_V1	27O_632PC_10_V1
27P_Vaccination: influenza, for patients with diabetes mellitus						
Number and percent of patients	FY2009/10	P	17+	E GOR SHA PCO	27P_10_V1	27P_633PC_10_V1
27Q_Blood glucose levels in (8 or less) in patients with diabetes mellitus						
Number and percent of patients	FY2009/10	P	17+	E GOR SHA PCO	27Q_10_V1	27Q_681PC_10_V1
27R_Years of life lost due to mortality from diabetes						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	27R_09_V1	27R_069CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	27R_09_V1	27R_069DR_09_V1
NA28_EPILEPSY						
28A_Mortality from epilepsy						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	28A_09_V1	28A_063NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	28A_09_V1	28A_063CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	28A_09_V1	28A_063SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	28A_09_V1	28A_063SM0074_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	28A_09_V1	28A_063SMT00++_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	28A_09_V1	28A_063DR00++_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	28A_09_V1	28A_063DR0074_09_V1
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	28A_09_V1	28A_063DRT00++_09_V1
28B_Prevalence:: epilepsy						
Number and percent of patients (adjusted for age)	FY2009/10	P	18+	E GOR SHA PCO	28B_10_V1	28B_640PC_10_V1
28C_Record of seizure frequency among patients with epilepsy						
Number and percent of patients	FY2009/10	P	18+	E GOR SHA PCO	28C_10_V1	28C_641PC_10_V1
28D_Patients with epilepsy on drug treatment and convulstion free						
Number and percent of patients	FY2009/10	P	18+	E GOR SHA PCO	28D_10_V1	28D_642PC_10_V1
28E_Years of life lost due to mortality from epilepsy						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	28E_09_V1	28E_091CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	28E_09_V1	28E_091DR_09_V1
28F_Epilepsy review among patients on drug treatment for epilepsy						
Number and percent of patients	FY2008/09	P	18+	E GOR SHA PCO	28F_10_V1	28F_675PC_10_V1
OA29_INFECTIOUS AND PARASITIC DISEASE						
29A_Incidence of meningococcal meningitis						
Number	2009	P	All ages	E&W E GOR ONS SHA LA PCO CTY	29A_09_V1	29A_088NO_09_V1
Directly standardised rate	2009	P	All ages	E&W E GOR ONS SHA LA PCO CTY	29A_09_V1	29A_088DR_09_V1
29B_Mortality from infectious and parasitic disease						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	29B_09_V1	29B_101NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	29B_09_V1	29B_101CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	29B_09_V1	29B_101SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	29B_09_V1	29B_101SM0074_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	29B_09_V1	29B_101SMT00++_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	29B_09_V1	29B_101DR00++_09_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	29B_09_V1	29B_101DR0074_09_V1
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	29B_09_V1	29B_101DRT00++_09_V1
29C_Years of life lost due to mortality from infectious and parasitic disease						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	29C_09_V1	29C_092CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	29C_09_V1	29C_092DR_09_V1
OB30_TUBERCULOSIS						
30A_Incidence of tuberculosis						
Number	2009	P	All ages	E&W E GOR ONS SHA LA PCO CTY	30A_09_V1	30A_098NO_09_V1
Directly standardised rate	2009	P	All ages	E&W E GOR ONS SHA LA PCO CTY	30A_09_V1	30A_098DR_09_V1
30B_Mortality from tuberculosis						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	30B_09_V1	30B_102NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	30B_09_V1	30B_102CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	30B_09_V1	30B_102SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	30B_09_V1	30B_102SM0074_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	5-64	E&W E GOR ONS SHA LA PCO CTY	30B_09_V1	30B_102SM0564_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	30B_09_V1	30B_102SMT00++_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	30B_09_V1	30B_102DR00++_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	30B_09_V1	30B_102DR0074_09_V1
Directly standardised rate	2007-09	MFP	5-64	E&W E GOR ONS SHA LA PCO CTY	30B_09_V1	30B_102DR0564_09_V1
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	30B_09_V1	30B_102DRT00++_09_V1
30C_Years of life lost due to mortality from tuberculosis						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	30C_09_V1	30C_093CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	30C_09_V1	30C_093DR_09_V1
PA31_MENTAL ILLNESS						
31A_Emergency hospital admissions: schizophrenia						
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	P	15-74	E GOR ONS SHA LA PCO CTY	31A_09_V1	31A_111ISR7QP_09_V1
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	F	15-74	E GOR ONS SHA LA PCO CTY	31A_09_V1	31A_111ISR7QF_09_V1
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	M	15-74	E GOR ONS SHA LA PCO CTY	31A_09_V1	31A_111ISR7QM_09_V1
31B_Emergency hospital admissions: neuroses						
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	P	15-74	E GOR ONS SHA LA PCO CTY	31B_09_V1	31B_110ISR7RP_09_V1
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	F	15-74	E GOR ONS SHA LA PCO CTY	31B_09_V1	31B_110ISR7RF_09_V1
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	M	15-74	E GOR ONS SHA LA PCO CTY	31B_09_V1	31B_110ISR7RM_09_V1
31C_Mortality from suicide						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	31C_09_V1	31C_113NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	31C_09_V1	31C_113CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	31C_09_V1	31C_113SM00++_09_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	31C_09_V1	31C_113SM0074_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	31C_09_V1	31C_113SMT00++_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	31C_09_V1	31C_113DR00++_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	31C_09_V1	31C_113DR0074_09_V1
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	31C_09_V1	31C_113DRT00++_09_V1
31D_Mortality from suicide and injury undetermined						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	31D_09_V1	31D_114NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	31D_09_V1	31D_114CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	31D_09_V1	31D_114SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	31D_09_V1	31D_114SM0074_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	15+	E&W E GOR ONS SHA LA PCO CTY	31D_09_V1	31D_114SM15++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	15-44	E&W E GOR ONS SHA LA PCO CTY	31D_09_V1	31D_114SM1544_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	31D_09_V1	31D_114SMT00++_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	31D_09_V1	31D_114DR00++_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	31D_09_V1	31D_114DR0074_09_V1
Directly standardised rate	2007-09	MFP	15+	E&W E GOR ONS SHA LA PCO CTY	31D_09_V1	31D_114DR15++_09_V1
Directly standardised rate	2007-09	MFP	15-44	E&W E GOR ONS SHA LA PCO CTY	31D_09_V1	31D_114DR1544_09_V1
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	31D_09_V1	31D_114DRT00++_09_V1
Directly standardised rate	1995-97 (OHN baseline)	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	31D_09_V1	31D_114DR00++_97_V5
31H_Prevalence: psychoses						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	31H_10_V1	31H_645PC_10_V1
31I_Health review and treatment checks among patients with psychoses						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	31I_10_V1	31I_646PC_10_V1
31K_Thyroid and renal function testing in patients on lithium therapy						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	31K_10_V1	31K_648PC_10_V1
31L_Years of life lost due to mortality from suicide						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	31L_09_V1	31L_094CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	31L_09_V1	31L_094DR_09_V1
31M_Years of life lost due to mortality from suicide and injury undetermined						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	31M_09_V1	31M_099CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	31M_09_V1	31M_099DR_09_V1
31N_Comprehensive care plan for patients on mental health register						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	31N_10_V1	31N_666PC_10_V1
31O_Follow-up of non-attendance at annual review among patients with psychoses						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	31O_10_V1	31O_667PC_10_V1
31P_Screening for depression in patients with diabetes and/or coronary disease						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	31P_10_V1	31P_668PC_10_V1
31Q_Depression severity assessment at outset of treatment						
Number and percent of patients	FY2009/10	P	18+	E GOR SHA PCO	31Q_10_V1	31Q_669PC_10_V1
31R_Further assessment of depression severity						
Number and percent of patients	FY2009/10	P	18+	E GOR SHA PCO	31R_10_V1	31R_679PC_10_V1
31S_Prevalence: depression						
Number and percent of patients	FY2009/10	P	18+	E GOR SHA PCO	31S_10_V1	31S_680PC_10_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
PB41_DEMENTIA						
41A_Prevalence: dementia						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	41A_10_V1	41A_664PC_10_V1
41B_Care review among patients with dementia						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	41B_10_V1	41B_665PC_10_V1
QA32_OSTEOPOROSIS						
32A_Emergency hospital admissions and timely surgery: fractured proximal femur						
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	P	All ages	E GOR ONS SHA LA PCO CTY	32A_09_V1	32A_020ISR7DP_09_V1
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	F	All ages	E GOR ONS SHA LA PCO CTY	32A_09_V1	32A_020ISR7DF_09_V1
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	M	All ages	E GOR ONS SHA LA PCO CTY	32A_09_V1	32A_020ISR7DM_09_V1
Indirectly age and sex standardised percent	FY2002/03 to FY2008/09	P	All ages	E GOR ONS SHA LA PCO CTY	32A_09_V1	32A_020ISP7DP_09_V1
Indirectly age and sex standardised percent	FY2002/03 to FY2008/09	F	All ages	E GOR ONS SHA LA PCO CTY	32A_09_V1	32A_020ISP7DF_09_V1
Indirectly age and sex standardised percent	FY2002/03 to FY2008/09	M	All ages	E GOR ONS SHA LA PCO CTY	32A_09_V1	32A_020ISP7DM_09_V1
32B_Mortality from fracture of femur						
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	32B_09_V1	32B_025SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	32B_09_V1	32B_025SM0074_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	65-84	E&W E GOR ONS SHA LA PCO CTY	32B_09_V1	32B_025SM6584_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	85+	E&W E GOR ONS SHA LA PCO CTY	32B_09_V1	32B_025SM85++_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	32B_09_V1	32B_025DR00++_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	32B_09_V1	32B_025DR0074_09_V1
Directly standardised rate	2007-09	MFP	65-84	E&W E GOR ONS SHA LA PCO CTY	32B_09_V1	32B_025DR6584_09_V1
Directly standardised rate	2007-09	MFP	85+	E&W E GOR ONS SHA LA PCO CTY	32B_09_V1	32B_025DR85++_09_V1
32C_Deaths within 30 days of emergency admission to hospital: fractured proximal femur						
Indirectly age and sex standardised rates	FY1999/00 to FY2008/09	P	All ages	E GOR ONS SHA LA PCO CTY	32C_09_V1	32C_213ISR2AP_09_V1
Indirectly age and sex standardised rates	FY1999/00 to FY2008/09	F	All ages	E GOR ONS SHA LA PCO CTY	32C_09_V1	32C_213ISR2AF_09_V1
Indirectly age and sex standardised rates	FY1999/00 to FY2008/09	M	All ages	E GOR ONS SHA LA PCO CTY	32C_09_V1	32C_213ISR2AM_09_V1
32E_Returning to usual place of residence following hospital treatment: fractured proximal femur						
Indirectly age and sex standardised percent	FY1999/00 to FY2008/09	P	All ages	E GOR ONS SHA LA PCO CTY NHST	32E_09_V1	32E_251ISP6P_09_V1
Indirectly age and sex standardised percent	FY1999/00 to FY2008/09	F	All ages	E GOR ONS SHA LA PCO CTY NHST	32E_09_V1	32E_251ISP6F_09_V1
Indirectly age and sex standardised percent	FY1999/00 to FY2008/09	M	All ages	E GOR ONS SHA LA PCO CTY NHST	32E_09_V1	32E_251ISP6M_09_V1
32F_Emergency readmissions to hospital within 28 days of discharge: fractured proximal femur						
Indirectly age and sex standardised	FY1999/00 to	P	All ages	E GOR ONS SHA LA PCO CTY NHST	32F_09_V1	32F_535ISP4FP_09_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
percent	FY2008/09					
Indirectly age and sex standardised percent	FY1999/00 to FY2008/09	F	All ages	E GOR ONS SHA LA PCO CTY NHST	32F_09_V1	32F_535ISP4FF_09_V1
Indirectly age and sex standardised percent	FY1999/00 to FY2008/09	M	All ages	E GOR ONS SHA LA PCO CTY NHST	32F_09_V1	32F_535ISP4FM_09_V1
RA33_OSTEOARTHRITIS						
33A_Hospital procedures: primary hip replacement						
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	P	All ages	E GOR ONS SHA LA PCO CTY	33A_09_V1	33A_132ISR7JP_09_V1
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	F	All ages	E GOR ONS SHA LA PCO CTY	33A_09_V1	33A_132ISR7JF_09_V1
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	M	All ages	E GOR ONS SHA LA PCO CTY	33A_09_V1	33A_132ISR7JM_09_V1
33B_Hospital procedures: revision hip replacement						
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	P	All ages	E GOR ONS SHA LA PCO CTY	33B_09_V1	33B_133ISR7KP_09_V1
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	F	All ages	E GOR ONS SHA LA PCO CTY	33B_09_V1	33B_133ISR7KF_09_V1
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	M	All ages	E GOR ONS SHA LA PCO CTY	33B_09_V1	33B_133ISR7KM_09_V1
33C_Hospital procedures: primary knee replacement						
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	P	All ages	E GOR ONS SHA LA PCO CTY	33C_09_V1	33C_253ISR7LP_09_V1
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	F	All ages	E GOR ONS SHA LA PCO CTY	33C_09_V1	33C_253ISR7LF_09_V1
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	M	All ages	E GOR ONS SHA LA PCO CTY	33C_09_V1	33C_253ISR7LM_09_V1
33D_Emergency readmissions to hospital within 28 days of discharge: primary hip replacement surgery						
Indirectly age and sex standardised percent	FY1999/00 to FY2008/09	P	All ages	E GOR ONS SHA LA PCO CTY NHST E	33D_09_V1	33D_533ISP4CPP1_09_V1 33D_533ISP4CPP2_09_V1
Indirectly age and sex standardised percent	FY1999/00 to FY2008/09	F	All ages	E GOR ONS SHA LA PCO CTY NHST E	33D_09_V1	33D_533ISP4CFP1_09_V1 33D_533ISP4CFP2_09_V1
Indirectly age and sex standardised percent	FY1999/00 to FY2008/09	M	All ages	E GOR ONS SHA LA PCO CTY NHST E	33D_09_V1	33D_533ISP4CMP1_09_V1 33D_533ISP4CMP2_09_V1
SA34 _PEPTIC ULCER						
34A_Mortality from gastric, duodenal and peptic ulcers						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	34A_09_V1	34A_136NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	34A_09_V1	34A_136CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	34A_09_V1	34A_136SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	34A_09_V1	34A_136SM0074_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	25-64	E&W E GOR ONS SHA LA PCO CTY	34A_09_V1	34A_136SM2564_09_V1

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
Indirectly standardised ratio (SMR)	2007-09	MFP	65-74	E&W E GOR ONS SHA LA PCO CTY	34A_09_V1	34A_136SM6574_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	34A_09_V1	34A_136SMT00++_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	34A_09_V1	34A_136DR00++_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	34A_09_V1	34A_136DR0074_09_V1
Directly standardised rate	2007-09	MFP	25-64	E&W E GOR ONS SHA LA PCO CTY	34A_09_V1	34A_136DR2564_09_V1
Directly standardised rate	2007-09	MFP	65-74	E&W E GOR ONS SHA LA PCO CTY	34A_09_V1	34A_136DR6574_09_V1
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	34A_09_V1	34A_136DRT00++_09_V1
34B_Years of life lost due to mortality from peptic ulcer						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	34B_09_V1	34B_100CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	34B_09_V1	34B_100DR_09_V1
TA35_PNEUMONIA						
35A_Mortality from pneumonia						
Number	2009	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	35A_09_V1	35A_137NO_09_V1
Average age-specific death rate	2007-09	MFP	1+, 1-4, 5-14, 15-34, 35-64, 65-74, 75+	E&W E GOR ONS SHA LA PCO CTY	35A_09_V1	35A_137CR_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	35A_09_V1	35A_137SM00++_09_V1
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	35A_09_V1	35A_137SM0074_09_V1
Indirectly standardised ratio (SMR)	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	35A_09_V1	35A_137SMT00++_09_V1
Directly standardised rate	2007-09	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	35A_09_V1	35A_137DR00++_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	35A_09_V1	35A_137DR0074_09_V1
Directly standardised rate	1993-2009	MFP	All ages	E&W E GOR ONS SHA LA PCO CTY	35A_09_V1	35A_137DRT00++_09_V1
35B_Years of life lost due to mortality from pneumonia						
Crude rates (YLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	35B_09_V1	35B_106CR_09_V1
Directly age-standardised rates (SYLL)	2007-09	MFP	<75	E&W E GOR ONS SHA LA PCO CTY	35B_09_V1	35B_106DR_09_V1
UA36_SURGERY						
36A_Potentially avoidable mortality associated with specified medical conditions amenable to surgical intervention						
Indirectly standardised ratio (SMR)	2007-09	MFP	<75	E&W E GOR ONS SHA LA CTY	36A_09_V1	36A_174SM0074_09_V1
Directly standardised rate	2007-09	MFP	<75	E&W E GOR ONS SHA LA CTY	36A_09_V1	36A_174DR0074_09_V1
36B_Deaths within 30 days of a hospital procedure: surgery (non-elective admissions)						
Indirectly age, sex and procedure standardised rate	FY1999/00 to FY2008/09	P	All ages	E GOR ONS SHA LA PCO CTY	36B_09_V1	36B_214ISR1AP_09_V1
Indirectly age, sex and procedure standardised rate	FY1999/00 to FY2008/09	F	All ages	E GOR ONS SHA LA PCO CTY	36B_09_V1	36B_214ISR1AF_09_V1
Indirectly age, sex and procedure standardised rate	FY1999/00 to FY2008/09	M	All ages	E GOR ONS SHA LA PCO CTY	36B_09_V1	36B_214ISR1AM_09_V1
36C_Hospital procedures: cataract removal						
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	P	All ages	E GOR ONS SHA LA PCO CTY	36C_09_V1	36C_254ISR7IP_09_V1
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	F	All ages	E GOR ONS SHA LA PCO CTY	36C_09_V1	36C_254ISR7IF_09_V1
Indirectly age and sex standardised rates	FY2002/03 to FY2008/09	M	All ages	E GOR ONS SHA LA PCO CTY	36C_09_V1	36C_254ISR7IM_09_V1
36D_Emergency readmissions to hospital within 28 days of discharge: hysterectomy						

Indicator Title Statistic/Method	Period	Gender	Age Groups	Organisations	File Name	Worksheet Name
Indirectly age standardised percent	FY1999/00 to FY2008/09	F	All ages	E GOR ONS SHA LA PCO CTY NHST E	36D_09_V1	36D_534ISP4BFP1_09_V1 36D_534ISP4BFP2_09_V1
VA38_HYPOTHYROIDISM						
38A_Prevalence: hypothyroidism						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	38A_10_V1	38A_643PC_10_V1
38B_Thyroid function tests in patients with hypothyroidism						
Number and percent of patients	FY2009/10	P	All ages	E GOR SHA PCO	38B_10_V1	38B_644PC_10_V1
WA42_LEARNING DISABILITIES						
42A_Prevalence: learning disabilities						
Number and percent of patients (adjusted for age)	FY2009/10	P	18+	E GOR SHA PCO	42A_10_V1	42A_674PC_10_V1

Updated: June 2011

EVALUATING THE QUALITY OF CLINICAL AND HEALTH INDICATORS

Contents

Introduction

When evaluating local and national policy decisions, or simply comparing the health of different regions, it is important to consider the quality and thus credibility of the indicators used:

"The public, healthcare managers and clinicians, policy-makers and the media need to be made aware of the limitations of existing indicator data to avoid misinterpretation."
(Wait, 2004)

A literature review was undertaken in June 2004 to evaluate existing criteria and methods used to rate the quality of clinical and health indicators. As a result of this process, a new framework has been developed which includes practical criteria to evaluate existing indicators in the *Compendium of Clinical and Health Indicators*. We encourage users to make informed judgements on the quality of indicators in the context in which data are to be used. This process may also help users to understand the limitations of their chosen indicator. A worked example of this evaluation process has been developed for an existing *Compendium* indicator, with each criterion graded on a simple 5-star rating scale.

Defining the quality of Clinical and Health Indicators

The term 'indicator' has been defined as an aggregated statistical measure, describing a group of patients or a whole population, compiled from measures or assessments made on people in the group or the population as a whole. An indicator may not necessarily provide answers to whether care has been 'good' or 'bad'; but well chosen indicators, as the term implies, should at least provide pointers to circumstances which may be worth further investigation.

Marder (1990) defines a clinical indicator as *"an instrument that is used to assess a measurable aspect of patient care as a guide to assessing performance of the health care organization or individual practitioners within the organization."*

Lengerich (1999) defines a health indicator as *"a construct of public health surveillance that defines a measure of health (i.e. the occurrence of a disease or other health-related event) or a factor associated with health (i.e. health status or other risk factor) among a specified population."*

Campbell *et al* (2003) have sub-divided 'health indicators' into three distinct categories: activity indicators (how frequently events occur); performance indicators (monitoring resource use, without necessarily inferring anything about quality); and quality indicators (inferring a judgement about quality of care).

Indicator quality, in the context of this Annex, refers to the degree of excellence and thus credibility of a given clinical or health indicator when tested against quality control criteria. It is important to distinguish 'quality of indicators' from the more widely documented 'quality indicators'. The latter are used to measure the quality of care in a given health system rather than the credibility of the indicators themselves.

Criteria for evaluating the quality of indicators

Criteria for evaluating the quality of clinical and health indicators were identified from 18 independent sources and organised into four groups: scientific criteria; policy criteria; methodological criteria; and statistical criteria.

All of the sources identified in the review have been included in a summary matrix (see Figure 1). The quality criteria were assigned using the best available definitions provided by the sources. Criteria are presented alongside their respective assessment questions. Using these criteria, we encourage users to make informed judgements on the quality of indicators in the context in which data are to be used. The recommended process for assessing the

question may involve expert opinion using rating scales (Exp), a systematic literature review (Lit), audit / survey of the measurement process (Aud), or statistical analysis of output (Sta). In many cases, this information may be available from the data custodians and sources of indicator data. We encourage greater transparency in published specifications in order to provide users with the information required to make an informed judgement, e.g. percentage of source records with missing data (data quality).

18 independent sources are listed from left to right based on the number of criteria provided, with the National Centre for Health Outcomes Development listing the most criteria (n=19). The frequency with which the 22 criteria are listed across all sources is shown in the final column, with 'data reliability' identified as the most popular criterion (n=13). The 7 most popular criteria are validity, policy-relevance, measurability, comparability, data quality, data reliability, and interpretability (n ≥ 10). Scientific soundness, actionability, explicit methodology, timeliness, frequency, sensitivity to change, and representativeness were listed by ≥ 5 sources. Relatively few (n < 5) sources noted the importance of an explicit definition, avoiding perverse incentives, attributability, confounding, acceptability, cost-effectiveness, and uncertainty. While the popularity of criteria says something about the level of agreement among the sources, this should not necessarily devalue the less popular criteria. A label identifying the type of indicator relevant to the source is listed beneath the source reference. These include health indicators (H), performance indicators (P), quality indicators (Q), global indicators (G), and fertility indicators (F).

Conceptual framework

Figure 2 summarises the four sets of criteria into three phases of the indicator life cycle, i.e. development (where both scientific and policy criteria are assessed), measurement (including an evaluation of the methodological criteria), and interpretation (where the statistical output is assessed). The implication is that an indicator must satisfy the 'development' phase before progressing to assessment at the higher levels. The 'measurement' phase should also be satisfied before progressing to the 'interpretation' phase. Ideally, the evaluation exercise should provide a results breakdown for each phase, highlighting the strengths, weaknesses, and areas for potential improvement. Both potential and existing indicators can be assessed using this framework, with a retrospective assessment applied to existing indicators.

Evaluating the quality of *Compendium* indicators: a worked example

Figure 3 provides a worked example using the *Compendium* indicator: 'Hospital Admissions: children with lower respiratory tract infections'. Evidence to support the quality criteria are presented and then ranked using a simple 5-star rating system to indicate the performance of the indicator against each of the criteria. The star ratings are assessed using the following simple scale:

*   very poor
**   poor
***   satisfactory
**** good
***** very good

This format allows the quality of the indicator to be scrutinised consistently and may therefore be useful for custodians, users, and indicator selection committees to help them understand the limitations of their chosen indicator.

Figure 1. Matrix of criteria used to evaluate the quality of clinical and health indicators

	NCHOD Assessment Question	Process	NCHOD, 2005 (H)	RSS, 2003 (P)	PAHO, 2001 (H)	IOM, 2001 (Q)	Pringle, 2002 (Q)	USAID, 1998 (P)	Boyce, 1997 (P)	Campbell et al, 2003 (Q)	Duffy, 2002 (Q)	McColl, 1998 (P)	Larson & Mercer, 2004 (G)	NHS, 1998 (P)	US Dept. Health, 2000 (F)	HCC, 2002 (P)	C'wealth Fund, 2004 (Q)	NCVHS, 2004 (Q)	RAND, 2003 (H)	Dept of Health, 2002 (P)	n
Scientific criteria																					
Explicit definition	Is the indicator explicitly defined by appropriate statistical units of measurement and clinical terminology?	Exp	*	*								*	*								4
Indicator validity	Will the indicator measure the phenomenon it purports to measure, i.e. does it makes sense both logically and clinically?	Exp	*	*	*	*	*	*	*		*	*	*				*				11
Scientific soundness	How scientific is the evidence / selection process (systematic / non-systematic) to support the validity of the indicator?	Lit, Exp	*				*			*								*	*		5
Policy criteria																					
Policy-relevance	Does the phenomenon under measurement represent significant public interest, disease burden, or cost?	Lit, Exp	*	*	*	*			*		*	*	*	*			*				10
Actionability	Can the factors which influence the phenomenon be positively influenced to induce a future health / cost benefit?	Lit, Exp	*			*	*						*				*		*		6
Perverse incentives	Will the measurement process encourage undesired behaviours by those under measurement?	Lit, Exp		*			*		*					*							4
Methodological criteria																					
Explicit methodology	Are measurement tools / procedures explicitly defined, understood and monitored?	Aud	*	*	*			*			*				*						6
Attributability	Are the factors which influence (+/-ve) the phenomenon likely to be identified, e.g. patient risk factors, practitioner procedure etc?	Exp					*					*		*							3
Timeliness	What is the average time (months) between measurement and results?	Aud		*	*	*		*					*		*			*			7
Frequency	What is the average time (months) between reporting of results?	Aud	*	*	*			*			*	*									6
Sensitivity to change	Do the measurement tools and timing of results allow changes to be observed over time?	Exp	*		*				*	*		*		*		*					7
Confounding	What is the risk that variations between organisations and changes over time may be influenced by confounding factors?	Exp	*	*																	2
Acceptability	What percentage of stakeholders accept the process of measurement and the reasons for it?	Aud									*										1
Measurability	Is the measurement process possible within the available budget and resources?	Aud	*		*	*	*	*		*	*		*		*		*	*			11
Cost-effectiveness	Does the likely output represent a cost-effective use of budget/resources?	Exp	*	*	*				*												4
Statistical criteria																					
Specificity	Does the measurement appropriately capture the level of detail required, e.g. sub-group analyses, accurate diagnosis?	Exp, Sta	*	*	*	*		*			*				*	*				*	9
Comparability	Is the measure comparable between relevant sub-groups, e.g. are age/sex/geography-specific data standardised and consistent?	Aud, Sta	*	*	*	*	*	*			*			*	*	*					10
Representativeness	Are sample sizes representative across all required sub-groups?	Aud, Sta	*	*	*			*			*	*	*								6
Data quality	% of the information missing from the records?	Aud, Sta	*	*	*	*	*		*	*					*	*		*	*	*	12
Data reliability	% agreement (kappa coefficient) between measured records and those collected by an independent source?	Aud, Sta	*		*	*	*	*	*	*	*	*	*		*	*				*	13
Uncertainty	Have appropriate techniques been selected to demonstrate the effects of variation, dispersion, and uncertainty (Shewhert, funnel plots etc.)?	Aud, Sta	*	*												*					3
Interpretability	Can understandable, meaningful, and communicable conclusions be drawn from the results?	Exp, Sta	*	*	*	*	*	*				*	*	*			*				10

H = Health indicators, P = Performance indicators, Q = Quality indicators, F = Fertility indicators, G = Global indicators, Exp = Expert opinion, Lit = Systematic Review, Aud = Survey/Audit, Sta = Stat analysis

Figure 2. Conceptual framework for evaluating the quality of clinical and health indicators
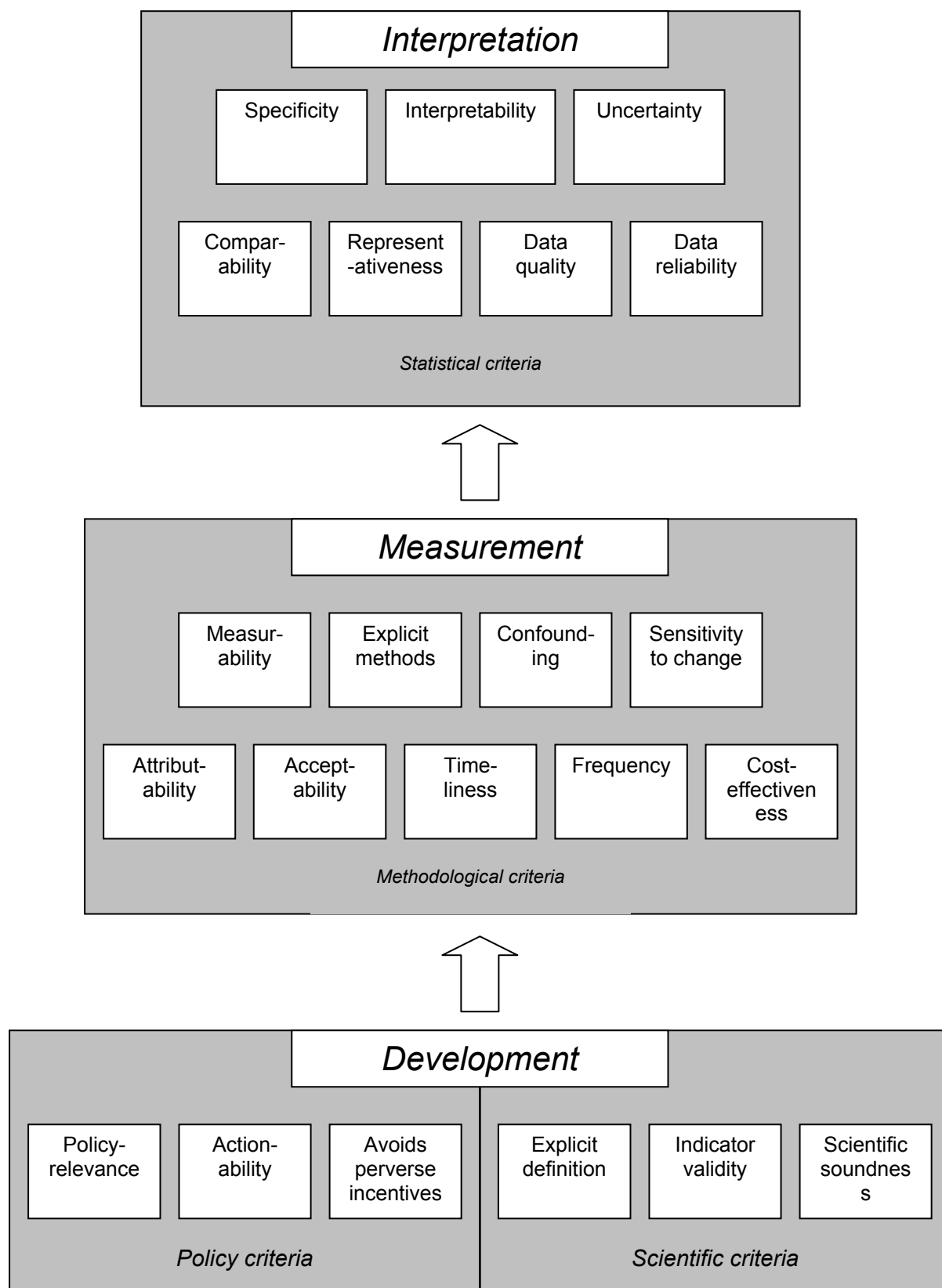
Figure 3. Evaluating the quality of clinical and health indicators: a worked example

Hospital Admissions: children with lower respiratory tract infections
Indirectly age and sex standardised rates per 100,000 (standardised to 2000-01)

	NCHOD Assessment Question	Indicator evidence	Rating
Scientific criteria			
Explicit definition	Is the indicator explicitly defined by appropriate statistical units of measurement and clinical terminology?	Provides explicit primary diagnoses and codes used by HES to define LRTI. Statistical method/units and variables (age, organisation, period) are explicit.	*****
Indicator validity	Will the indicator measure the phenomenon it purports to measure, i.e. does it make sense both logically and clinically?	The indicator purports to measure the rate of emergency admissions to hospital of children with lower respiratory tract infections. Explicit coding of clinical illness (HES) provides a recognised and logical monitoring system for this purpose.	*****
Scientific soundness	How scientific is the evidence / selection process (systematic / non-systematic) to support the validity of the indicator?	This indicator has been developed via a feasibility study / systematic review process. Associations with breast-feeding and tobacco smoke are not explicitly supported with scientific (trial-based) evidence in the specification. References are quoted, however.	****
Policy criteria			
Policy-relevance	Does the phenomenon under measurement represent significant public interest, disease burden, or cost?	Relevant national initiatives are considered, including the reduction in hospital admission for lower respiratory infections as one of the Sure Start targets within the NHS plan. The indicator was proposed by the Department of Health and is therefore highly policy-relevant.	****
Actionability	Can the factors which influence the phenomenon be positively influenced to induce a future health / cost benefit?	Preventative measures such as breast-feeding and reduction of exposure to tobacco smoke are not supported by specific quantifiable evidence. Follow-up studies are recommended to assess the extent to which admissions were potentially avoidable.	***
Perverse incentives	Will the measurement process encourage undesired behaviours by those under measurement?	Perverse incentives are not considered in the specification. A reduction in hospital admissions for LRTIs is noted as a Sure Start target, and thus perversities associated with organisational targets to reduce admissions could be explored.	*
Methodological criteria			
Explicit methodology	Are measurement tools / procedures explicitly defined, understood, and monitored?	Comments on the numerator are comprehensive, and reference is also made to the methods used, i.e. cross-sectional annual comparative HES-based indicator. HES data are routinely monitored for completeness, which in turn reflects understanding in the coding.	****
Attributability	Are the factors which influence (+/-ve) the phenomenon likely to be identified, e.g. patient risk factors, practitioner procedure etc?	This indicator has been developed and defined for surveillance and comparative purposes, rather than exploration of any link to social determinants (e.g. breast-feeding and tobacco smoke). Hospitals and PCOs in general will therefore be attributable.	****
Timeliness	What is the average time (months) between measurement and results?	HES data are collected throughout the year and extracted at the end of the financial year. Data cleaning and extraction may take a period of 8 months before transfer to NCHOD. Automated analysis enables results to be released within a further 3-6months.	*****
Frequency	What is the average time (months) between reporting of results?	Results are reported in approximate 12 month intervals.	****
Sensitivity to change	Do the measurement tools and timing of results allow changes to be observed over time?	Trend data and statistical significance of change are presented annually for the historical period 1998-2002. This allows appropriate surveillance of medium/long-term policy such as anti-smoking initiatives, promotion of breast-feeding etc.	*****
Confounding	What is the risk that variations between organisations and changes over time may be influenced by confounding factors?	Several potential confounders are presented in the specification, including the variation in the pattern of care between years and organisations (e.g. extent of treatment, referral policies, outpatient facilities, inpatient policies). There are various potential risks.	***
Acceptability	What percentage of stakeholders accept the process of measurement and the reasons for it?	The acceptability of the indicator is not described, e.g. accepted by clinicians, coders, patients, policy-makers. However, the fact that this indicator was proposed by the Department of Health highlights initial acceptability from policy makers.	***
Measurability	Is the measurement process possible within the available budget and resources?	As the indicator forms a recognised part of the HES surveillance, its measurability is assumed to be possible as a by-product of routine data collected for other purposes.	*****
Cost-effectiveness	Does the likely output represent a cost-effective use of budget/resources?	The cost-benefit of indicators is not measured directly. However, it is inexpensive as a by-product of data already collected, and NCHOD encourages follow-up investigations by users to assess the use and usefulness the indicator.	****
Statistical criteria			
Specificity	Does the measurement appropriately capture the level of detail required, e.g. sub-group analyses, accurate diagnosis?	The HES coding for diagnosis are explicit. Statistics are presented for the <16 yr age group for England, GORs, ONS Areas, SHAs, PCOs and LAs. An age breakdown, e.g. <1yr, may be beneficial to assess the impact of breast-feeding initiatives.	****
Comparability	Is the measure comparable between relevant sub-groups, e.g. age/sex/geography-specific data standardised and consistent?	This indicator is indirectly age- and sex-standardised, and thus allows comparison against a standard. Geographical regions are visually comparable using graphical output.	*****
Representativeness	Are sample sizes representative across all required sub-groups?	Values may reflect chance occurrences, with random fluctuations between years and organisations. Numbers of admissions may be small at PCO and LA level. The results should therefore be interpreted with caution and with the aid of confidence intervals.	***
Data quality	% of the information missing from the records?	Data on % missing / invalid codes within each field used for the indicator, for each organisation, are published alongside the indicator. There is no audit of quality of diagnosis.	****
Data reliability	% agreement (kappa coefficient) between measured records and those collected by an independent source?	All HES-based data must satisfy at least 80% agreement between HES and independent activity counts supplied by the trust or the HES counts from the previous year.	*****
Uncertainty	Have appropriate techniques been selected to demonstrate the effects of variation, dispersion, and uncertainty (Shewhert, funnel plots etc.)?	95% confidence intervals are used. If the confidence interval for an area's rate is outside the range of the national confidence intervals, the difference between the two rates is considered statistically significant. P-values are also presented.	*****
Interpretability	Can understandable, meaningful, and communicable conclusions be drawn from the results?	The specification contains guidance on interpretation, suggests that there may well be local explanations for observed values, and recommends further local investigation.	****

The 5 star ratings are a simple (unscientific) method of assessing criteria based on the supporting evidence i.e. from very poor (*) to very good (*****)

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ANNEX 13

GLOSSARY

ADS	Attribution Data Set
APHO	Association of Public Health Observatories
AY	Academic Year
BASCD	British Association for the Study of Community Dentistry
BMA	British Medical Association
BMJ	British Medical Journal
CDSC	Communicable Disease Surveillance Centre
CHOU	Central Health Outcomes Unit of DH
CIPS	Continuous Inpatient Spell
CQC	Care Quality Commission (formerly HC – Healthcare Commission)
CT	Care Trust
DCLG	Department for Communities and Local Government
DEFRA	Department for Environment, Food and Rural Affairs
DfEE	Department for Education and Employment
DTLR	Department for Transport, Local Government and the Regions (formerly DETR)
DH	Department of Health
DMFT/dmft	Decayed/Missing/Filled/Teeth: DMFT- Permanent teeth; dmft- deciduous (milk) teeth
DSR	Directly Standardised Rate
DSS	Department of Social Security
E	England
ES	Employment Service
E&W	England & Wales
F	Females
FPC	Faculty of Public Health
FY	Financial Year
GAD	Government Actuary's Department
GHS	General Household Survey
GOR	Government Office Region
GP	General Practitioner
HA	Health Authority
HC	Healthcare Commission (formerly CHI - Commission for Health Improvement)
HES	Hospital Episode Statistics
HESID	Hospital Episode Statistics Identifying Data
HMSO	Her Majesty's Stationery Office
HPA	Health Protection Agency
IC	The NHS Information Centre for health and social care
HSE	Health Survey for England
HSG	Health Service Guidelines
ICD	International Classification of Diseases
ID	Indices of Deprivation
LA	Local Authority
LHG	Local Health Group
LSOA	Lower Layer Super Output Area
M	Males
MFP	Males, females, persons
NCHOD	National Centre for Health Outcomes Development
NatCen	National Centre for Social Research
NDSCR	National Down Syndrome Cytogenetic Register
NHS	National Health Service
NHST	NHS provider Trust
NHSCCC	National Health Service Centre for Coding and Classifications (now part of The NHS Information Centre for health and social care)
NICE	National Institute for Health & Clinical Excellence
NS	National Statistics
NWPHO / TDO	North West Public Health Observatory / The Dental Observatory
OBS	Observed Count
ODPM	Office of the Deputy Prime Minister.
OHN	Our Healthier Nation
ONS	Office for National Statistics
OPCS-4	Office of Population, Censuses and Surveys – Classification of Surgical Operations and Procedures, 4th Revision
OUG	Occupation Unit Group
P	Persons
PCG	Primary Care Group

PCO	Primary Care Organisation
PCT	Primary Care Trust
PDF	Portable Document Format (Adobe)
PHCDS	Public Health Common Data Set
PHO	Public Health Observatory
QOF	Quality and Outcomes Framework
RO	Regional Office
RTF	Rich Text Format
SAS	Small Area Statistics
SHA	Strategic Health Authority
SCPR	Social and Community Planning Research
SMR	Standardised Mortality Ratio
SMRLL	Standardised Mortality Ratio Lower Limit
SMRUL	Standardised Mortality Ratio Upper Limit
SOA	Super Output Area
SOC	Standard Occupational Classification
SRR	Standardised Registration Ratio
SRRLL	Standardised Registration Ratio Lower Limit
SRRUL	Standardised Registration Ratio Upper Limit
SVG	Scalable Vector Graphics (Adobe)
SYLL	Standardised Years of Life Lost
T	NHS Hospital Trusts
TPAR	Total Period Abortion Rate
TPFR	Total Period Fertility Rate
UCAS	Universities & Colleges Admissions Service
WCISU	Welsh Cancer Intelligence and Surveillance Unit
WHO	World Health Organization
YHA	Youth Hostel Association
YLL	Years of Life Lost
YMCA	Young Men's Christian Association
YWCA	Young Women's Christian Association

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